

Evidence in PRM (PM&R) Between Facts and Prejudice

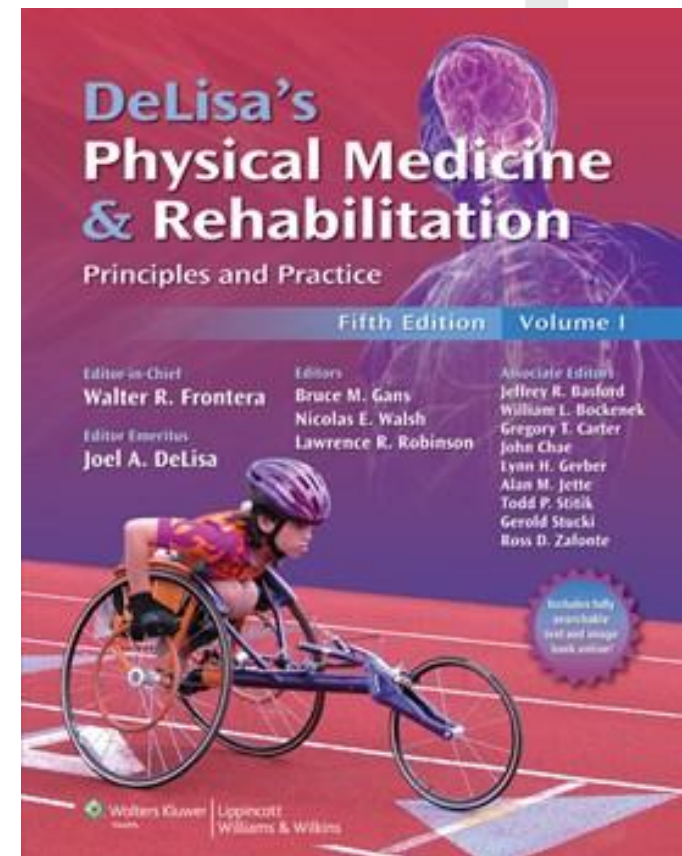
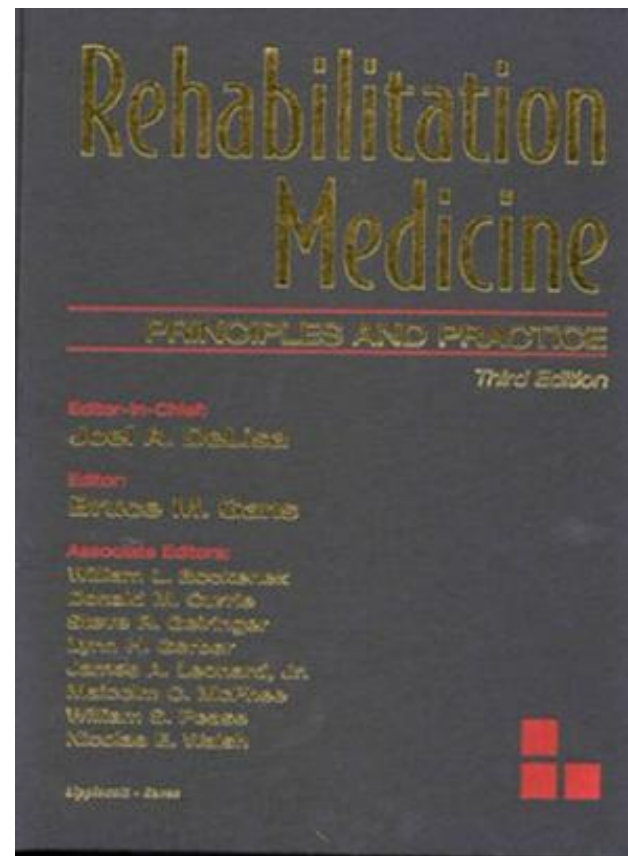
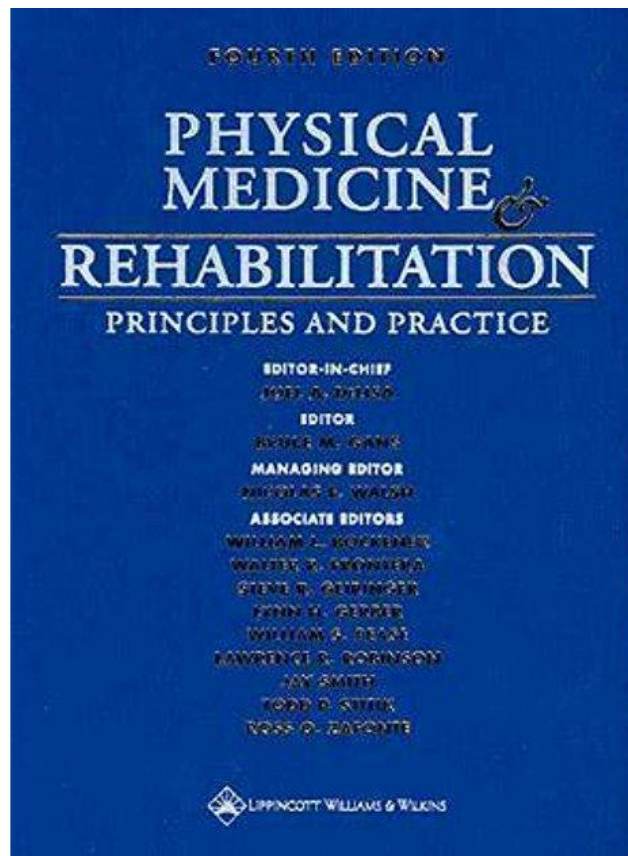
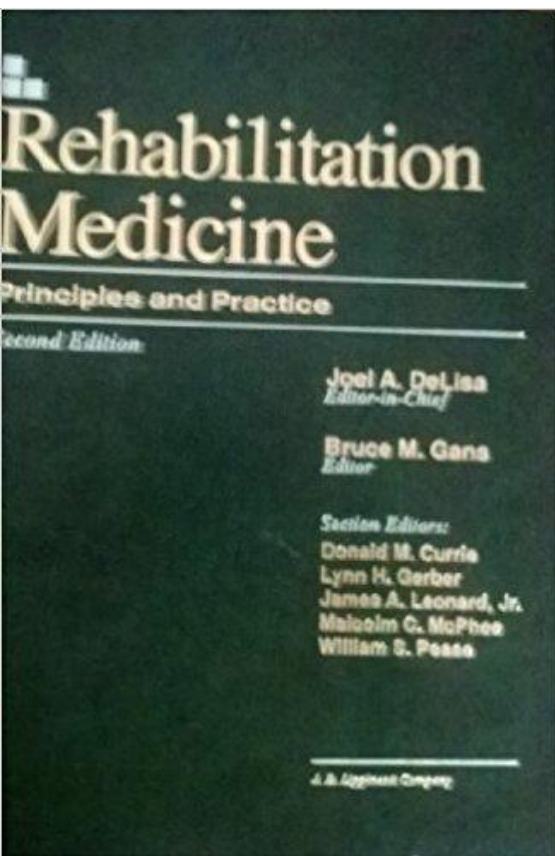
Stefano Negrini

Chair of Physical and Rehabilitation Medicine
University of Brescia, Don Gnocchi Foundation
Director of Cochrane Rehabilitation

Trusted evidence.
Informed decisions.
Better health.



DeLisa Lecture





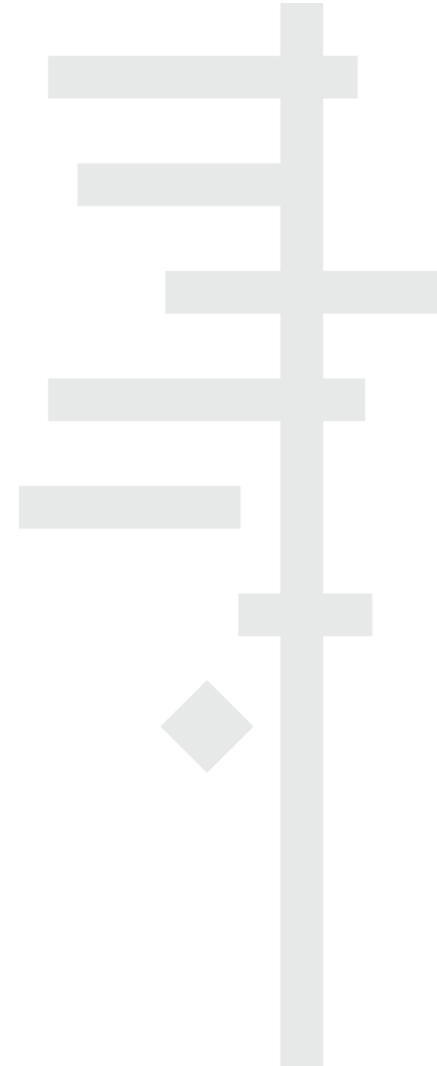
Disclosure

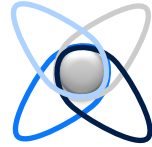
Director of Cochrane Rehabilitation

Chief-Editor of the European Journal of Physical and Rehabilitation Medicine
(congress expenses)

ISICO (Italian Scientific Spine Institute): stock

Medtronic: consultant





Disclosure

I am not American



Disclosure

I am not American

Language mistakes

PRM for Physical and Rehabilitation Medicine

and not

PM&R for Physical Medicine & Rehabilitation



In PRM there is no EVIDENCE

A constant **boulder**
on PRM shoulders



Overview

Evidence Based Medicine (EBM)

- The origin and reason for EBM
- Cochrane: the Gold Standard of EBM

Physical and Rehabilitation Medicine (PRM) and EBM

- PRM vs other medical specialties
- Problems with evidence generation in PRM
- State of research in PRM

Implementation of EBM in PRM

- Knowledge Translation
- Cochrane Rehabilitation

Some solutions for EBM in PRM



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Some solutions for EBM in PRM



Charles II, King of England and Scotland (1685)

He had a stroke and was treated by the best physicians

- 16 ounces bloodletting
- Not allowed to sleep making him sitting
- Glass cups on the shoulders
- Shoulders scarification for 8 ounces more of bloodletting
- Emetics and laxative at high dosage, with repeated clysters
- Shaven and stuck needles in the head
- White-hot cautery

Luckily the king died without awakening

The so-called tradition-based official medicine



Dr. Lind and scarvy (1747)

Scarvy: cause of death in sea explorations

Treatments mandated by Dr Lind advisors and paiers:

- Royal College of Physicians: sulfuric acid
- Admiralty: vinegar

The idea:

- 12 patients, same diet, 6 groups of 2
 - sulfuric acid,
 - vinegar,
 - cider,
 - sea water,
 - nutmeg,
 - 2 oranges and 1 lemon

First controlled study in history



Thalidomide (1961)

Drug for nausea during pregnancy

Proper studies were performed before marketing

First reports of phocomelias archived as “random events”

Reports increased, but the drug company did not disclose them until a scandal broke

Mandatory to collect data on adverse events and report to independent governmental agencies (like FDA)





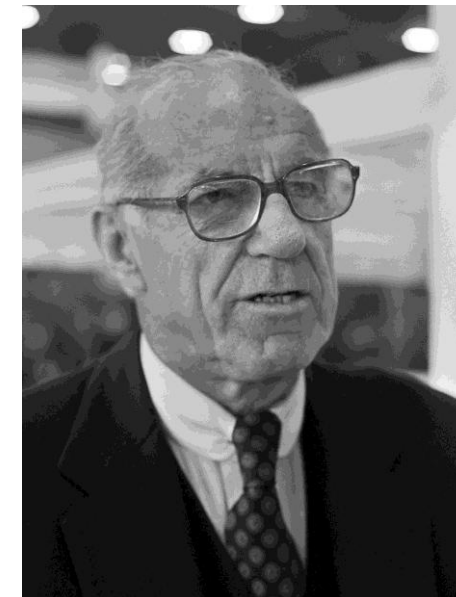
Dr. Spock and Sudden Infant Death Syndrome

Renowned pediatrician, developer of a new educational model

Expert statement: “Do not let infants sleep on their back to avoid choking on the vomit and to avoid compression of the head always on the same side” (1956)

Studies about supine vs prone lying in infants:

- First small RCT (1965): no differences
- First serious RCT (1985): better supine
- Cochrane (2005): prone 4.15 (3.3-5.3) increased risk of SIDS



Importance of RCTs and metanalysis

«Official» Medicine today

- King Charles II
- Dr Lind
- Thalidomide
- Sudden Infant Death Syndrome

The methodology of “official medicine” comes from our history



Evidence Based Medicine

The explicit, conscientious, and judicious use of the current best evidence in making decisions about the care of individual patients (and populations)



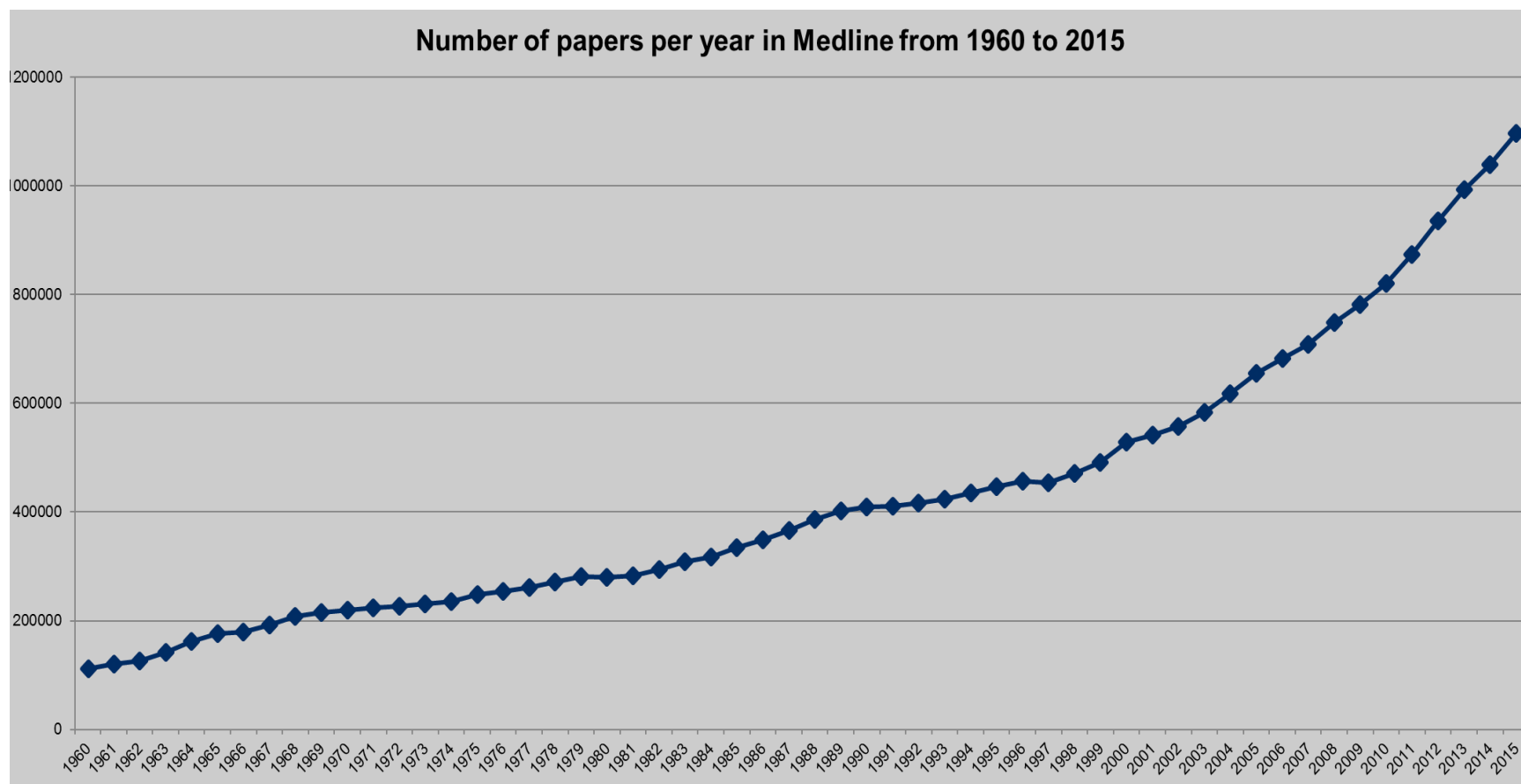
Evidence Based Clinical Practice

The integration of

- best research evidence
- with clinical expertise
- and patient values



Growth of studies in PubMed



Studies hierarchy

Levels of Evidence Pyramid



EBM is the last methodological achievement in the young history of medicine



Overview

Evidence Based Medicine (EBM)

- Some notes on History of Medicine
- **Cochrane: the Gold Standard of EBM**

Physical and Rehabilitation Medicine (PRM) and EBM

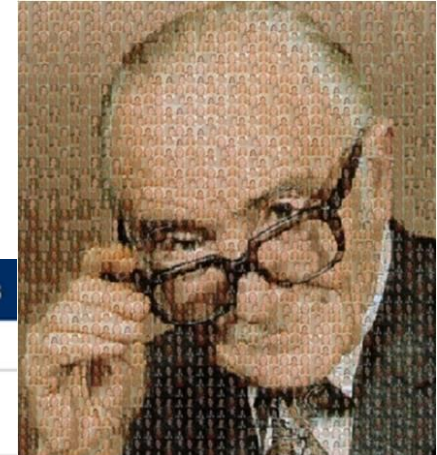
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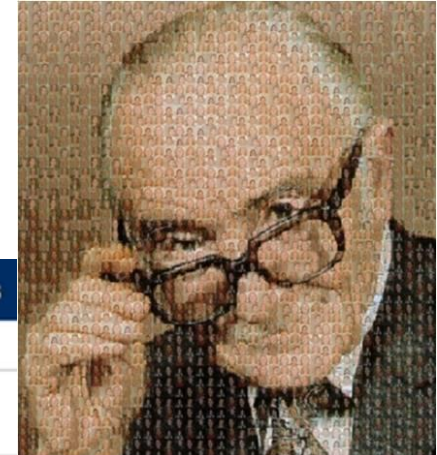
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Trusted evidence.
Informed decisions.
Better health.

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Our evidence

[See full list of our evidence.](#)



Cochrane vision

A world of improved health where decisions about health and health care are informed by high-quality, relevant and up-to-date synthesized research evidence.



What does Cochrane do ?

Cochrane gathers and summarizes the best evidence from research producing **systematic reviews and meta-analysis** including only Randomized Controlled Trials (RCTs).

Cochrane **does not accept commercial or conflicted funding**



Why is Cochrane important ? An example

A physiotherapist

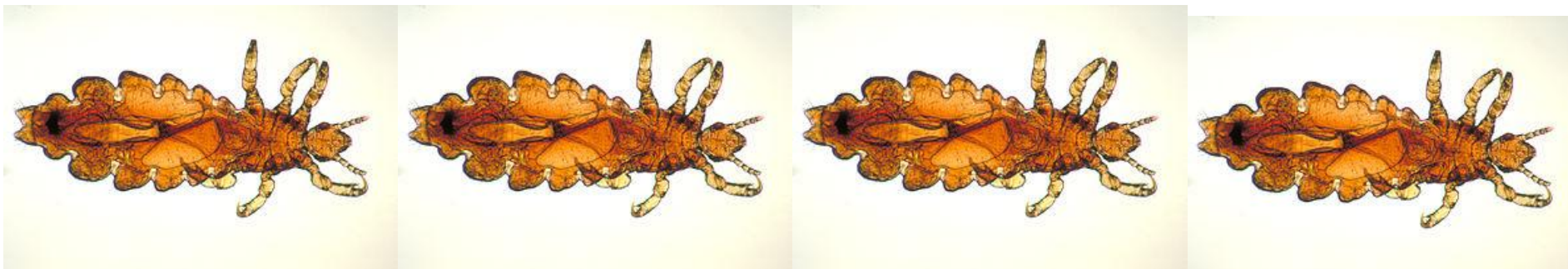
Two very nice daughters with long, blond hair

Pediculosis – head lice got at school

They tried all known popular remedies, but no success

Last solution: totally cut their hair

Suddenly an IDEA – why not to try to check with Cochrane ?



Problem solved

Cochrane Database of Systematic Reviews

Interventions for treating head lice

Protocol

Intervention

Johannes C van der Wouden , Tim Klootwijk, Laurence Le Cleach, Giao Do, Robert Vander Stichele, Arie Knuistingh Neven, Just AH Eekhof

First published: 5 October 2011

Editorial Group: Cochrane Infectious Diseases Group

DOI: 10.1002/14651858.CD009321 [View/save citation](#)

Cited by: 2 articles [Refresh](#) [Citing literature](#)



Now he is the author of 2 systematic reviews in his field of competence



Trusted evidence.
Informed decisions.
Better health.

Cochrane.org

Search title, abstract, keyword



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gettyimages/FatCamera



Patient reminders and recalls
Can they improve immunization rates?

[Read the review](#)



Best of Cochrane Library: 2017

[Read the Special Collection](#)



Yoga for health and well-being

[Read the Special Collection](#)

Highlighted Reviews

Editorials

Special Collections

Interventions to prevent hypothermia at birth in preterm and/or low birth weight infants

Emma M McCall, Fiona Alderdice, Henry L Halliday, Sunita Vohra, Linda Johnston

12 February 2018



Cochrane
Interactive Learning



Trusted evidence.
Informed decisions.
Better health.

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- News and events
- Cochrane Library



New learning opportunities in evidence-based health care for medical students in Sweden

Cochrane Colloquium
Edinburgh, 16-18 Sep 2018

What is Cochrane evidence
and how can it help you?

Latest Cochrane evidence

Top 10

No evidence to show whether removing nail polish and finger rings prevents wound infection after surgery

Steroids for the treatment of influenza

Latest News and Events



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Cochrane News

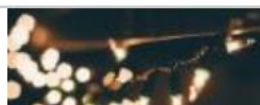
- ◆ New learning opportunities in evidence-based health care for medical students in Sweden
- ◆ Cochrane seeks Knowledge Translation Project Manager - Flexible location
- ◆ Cochrane Sweden seeks Fellow - Lund, Sweden
- ◆ New National License Agreement Provides Brazil with Unlimited Access to the Cochrane Library
- ◆ New on the Cochrane Library: Best of 2017 Special Collection



Weekly Evidence in Rehabilitation

Latest News and Events

Updates on Cochrane



Cochrane Rehabilitation at



Keep Posted



Tweets by
@CochraneRehab

@CochraneR...
@CochraneRe...
Cochrane seeks Knowledge

Cochrane is the actual gold standard for a good EBM approach



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- State of research in PRM

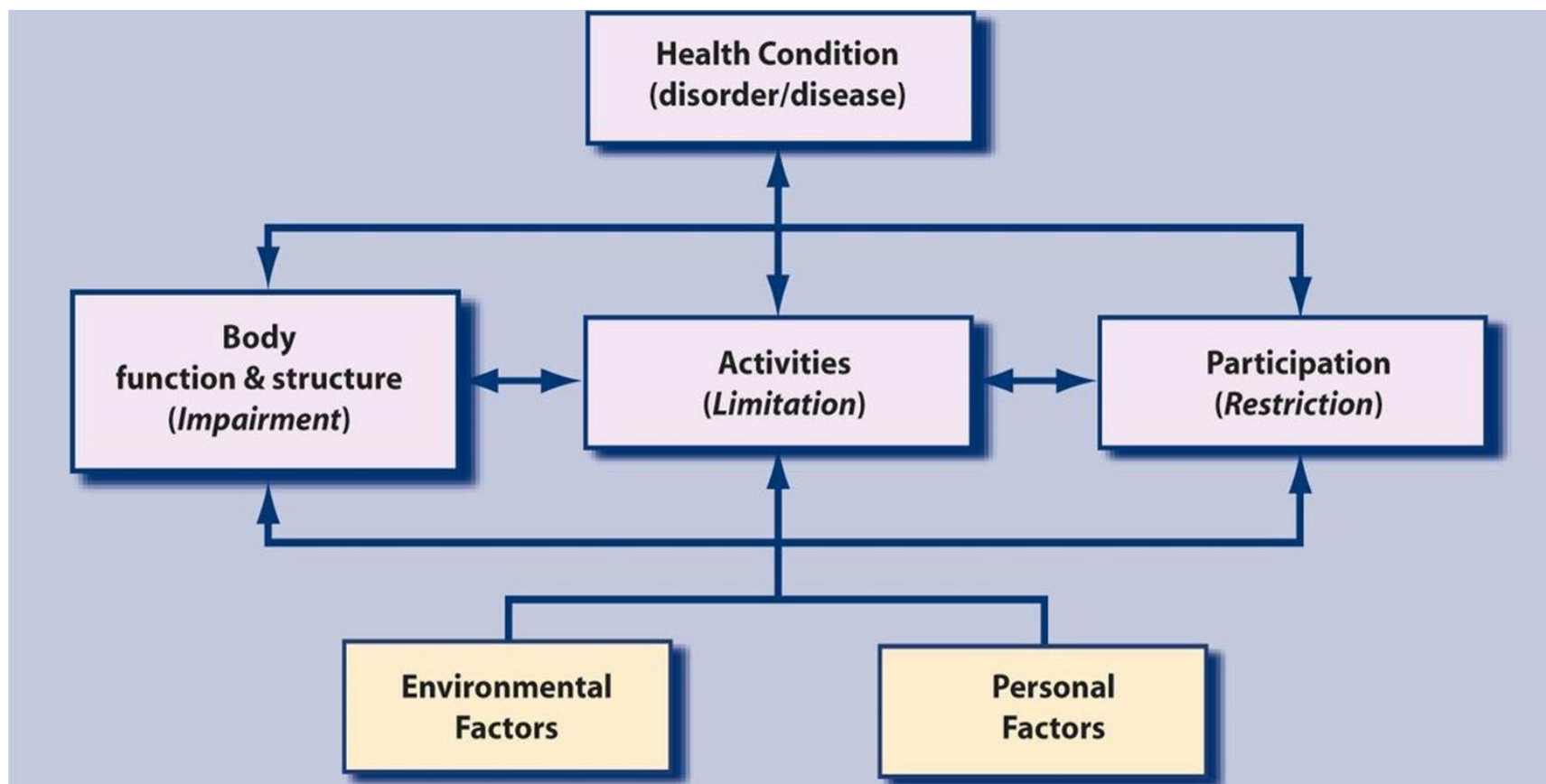
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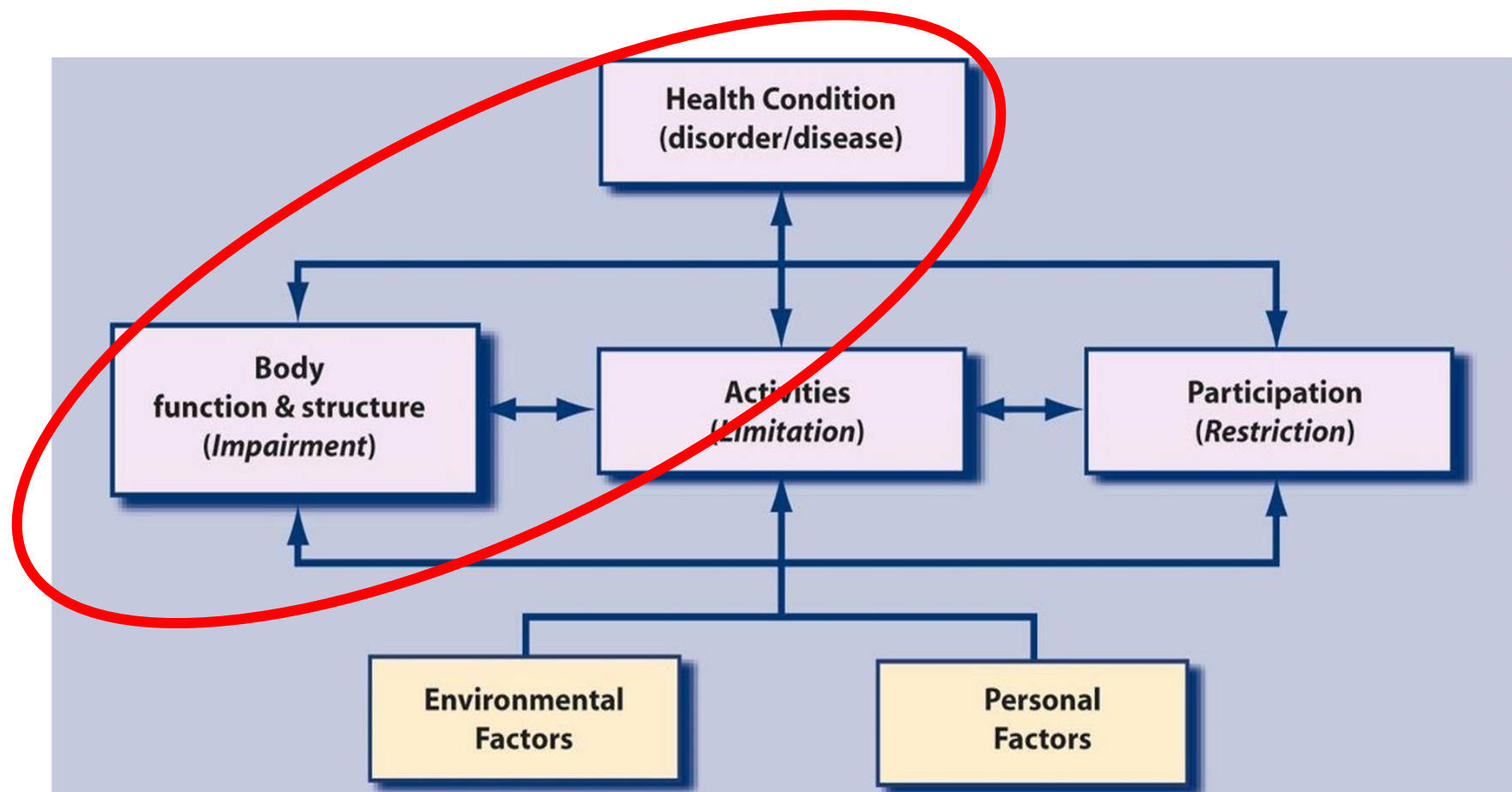
Some solutions for EBM in PRM



ICF biopsychosocial model (WHO)

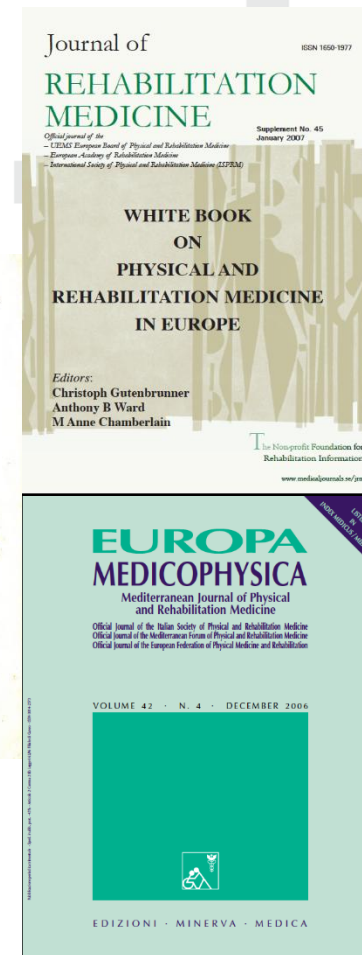
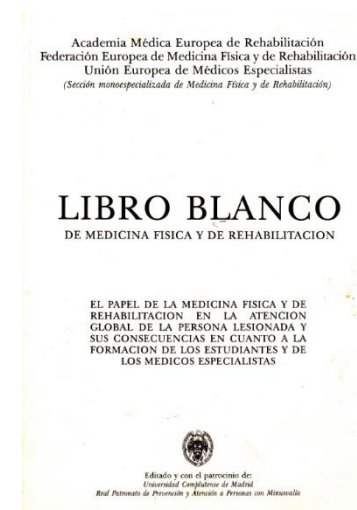


Classical medical specialties



Core concepts of PRM

	Classical medicine	PRM specialty
Overall approach	Disease oriented	Person/functioning oriented (holism)
Diagnosis and prognosis	Medical	Functional and medical
Treatments	One modality at a time	Multimodal
Morbidities	Single	Multiple
Professional approach	Individual	Multi-professional team



PRM has specific challenges for EBM that must be faced



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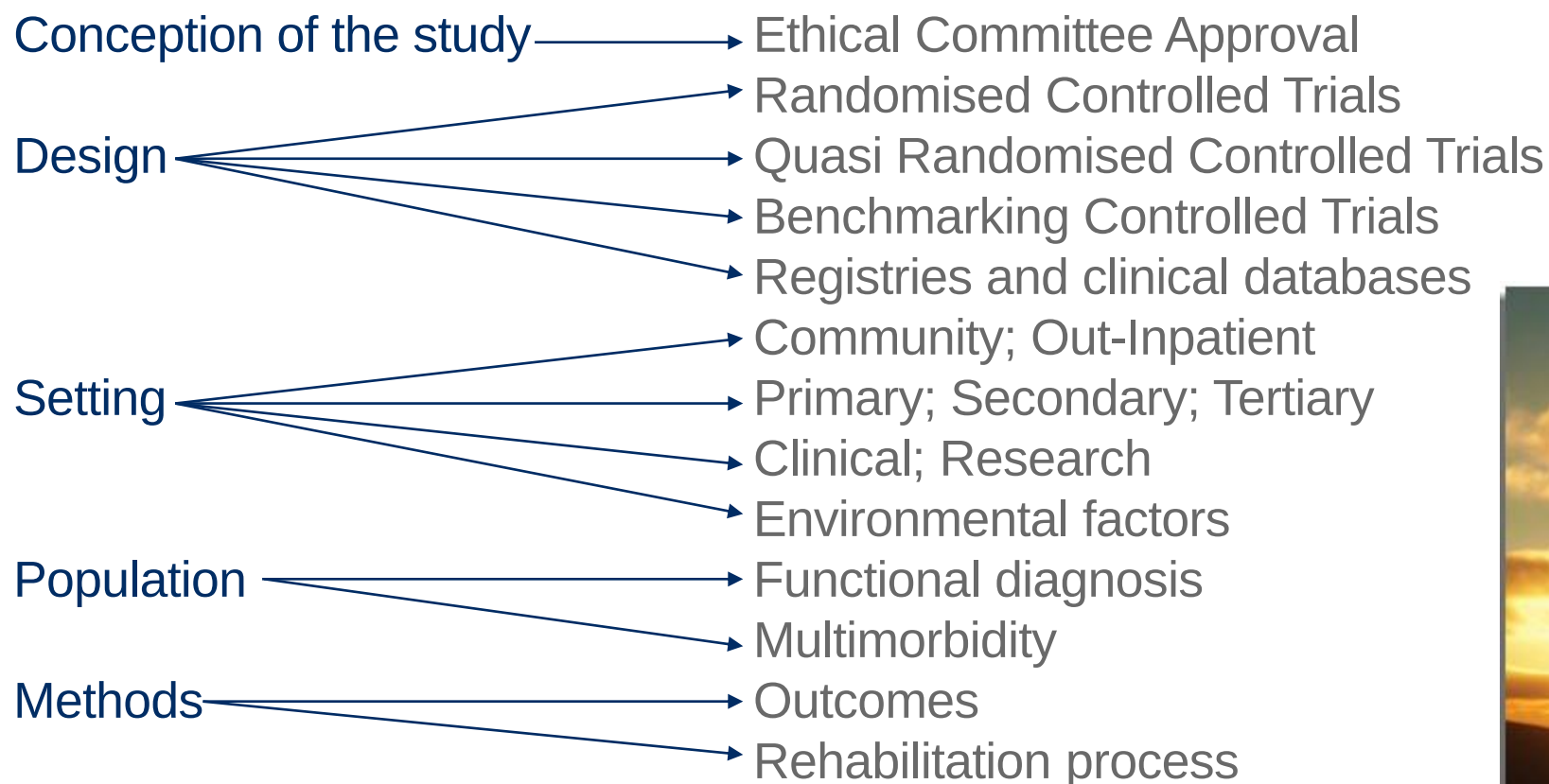
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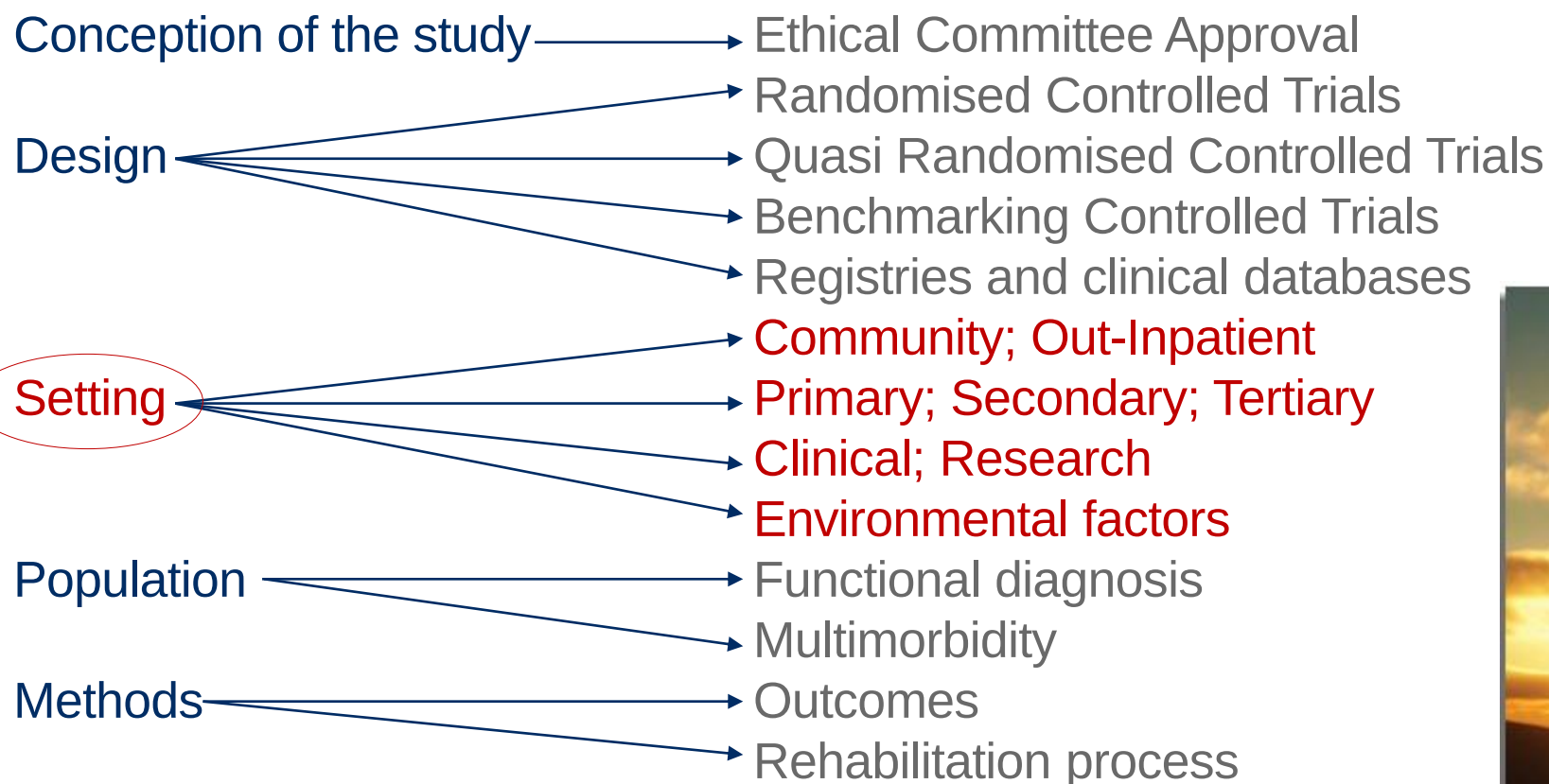
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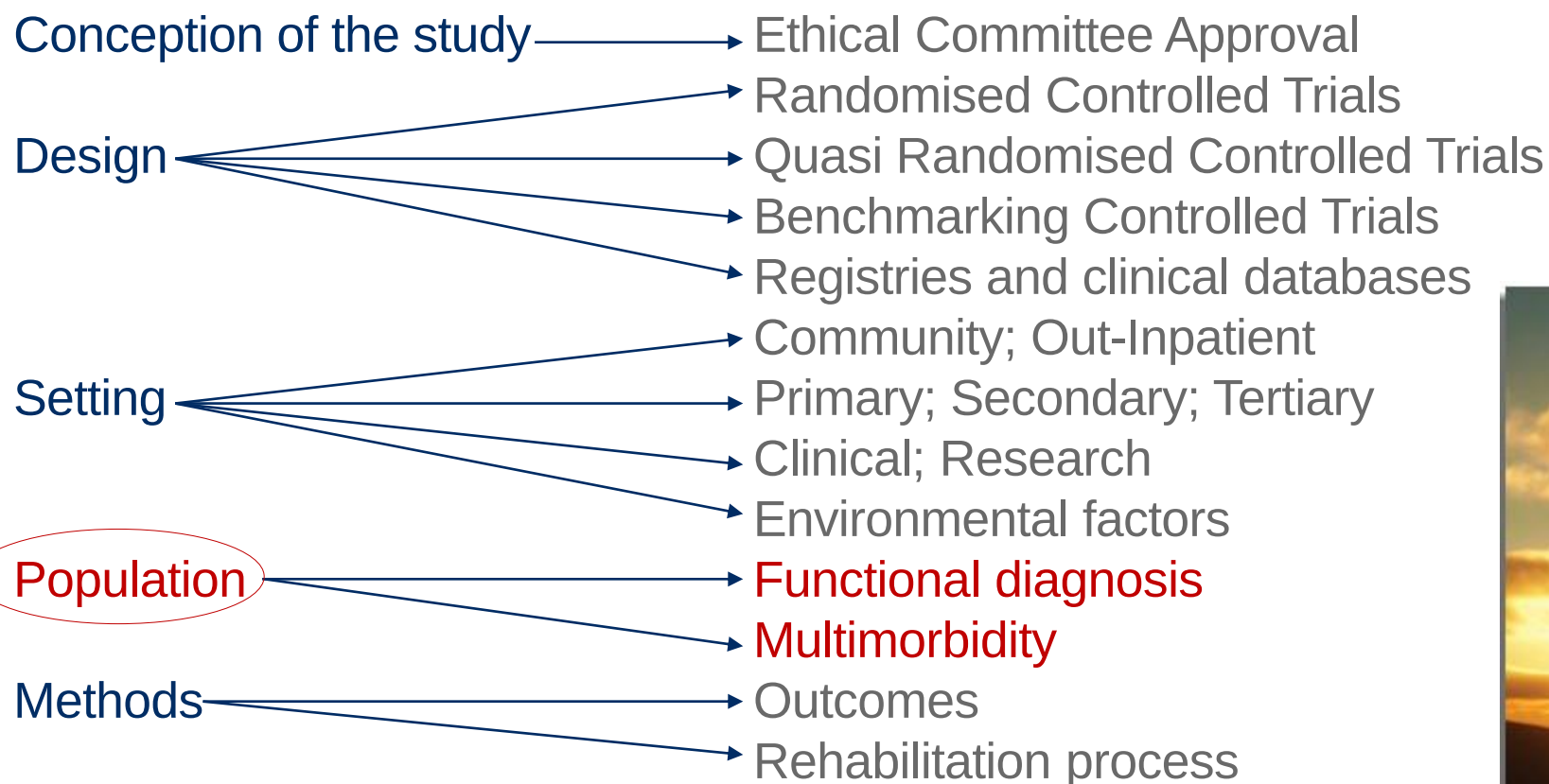
Research problems in PRM



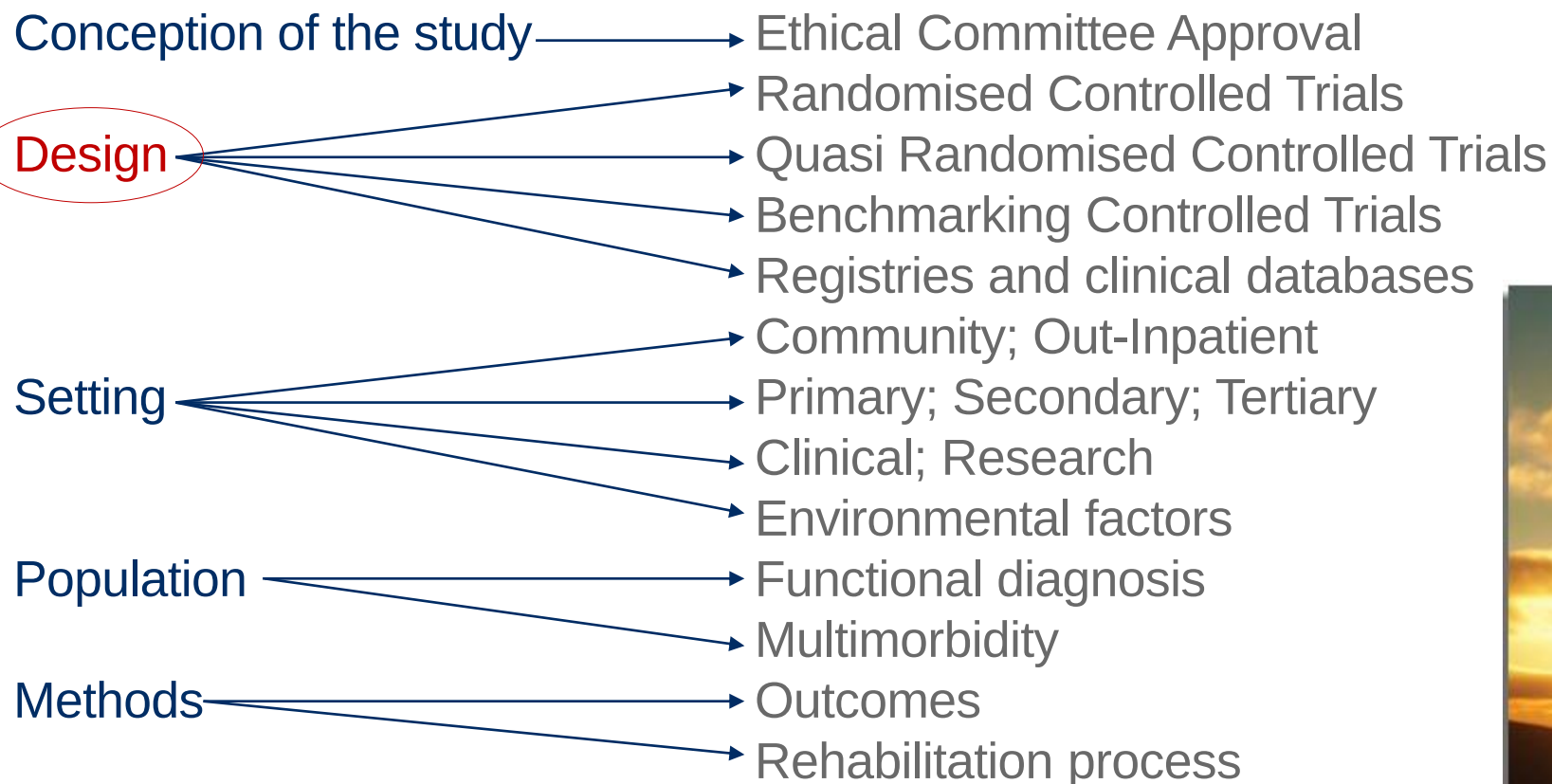
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Research problems in PRM



Research problems in PRM

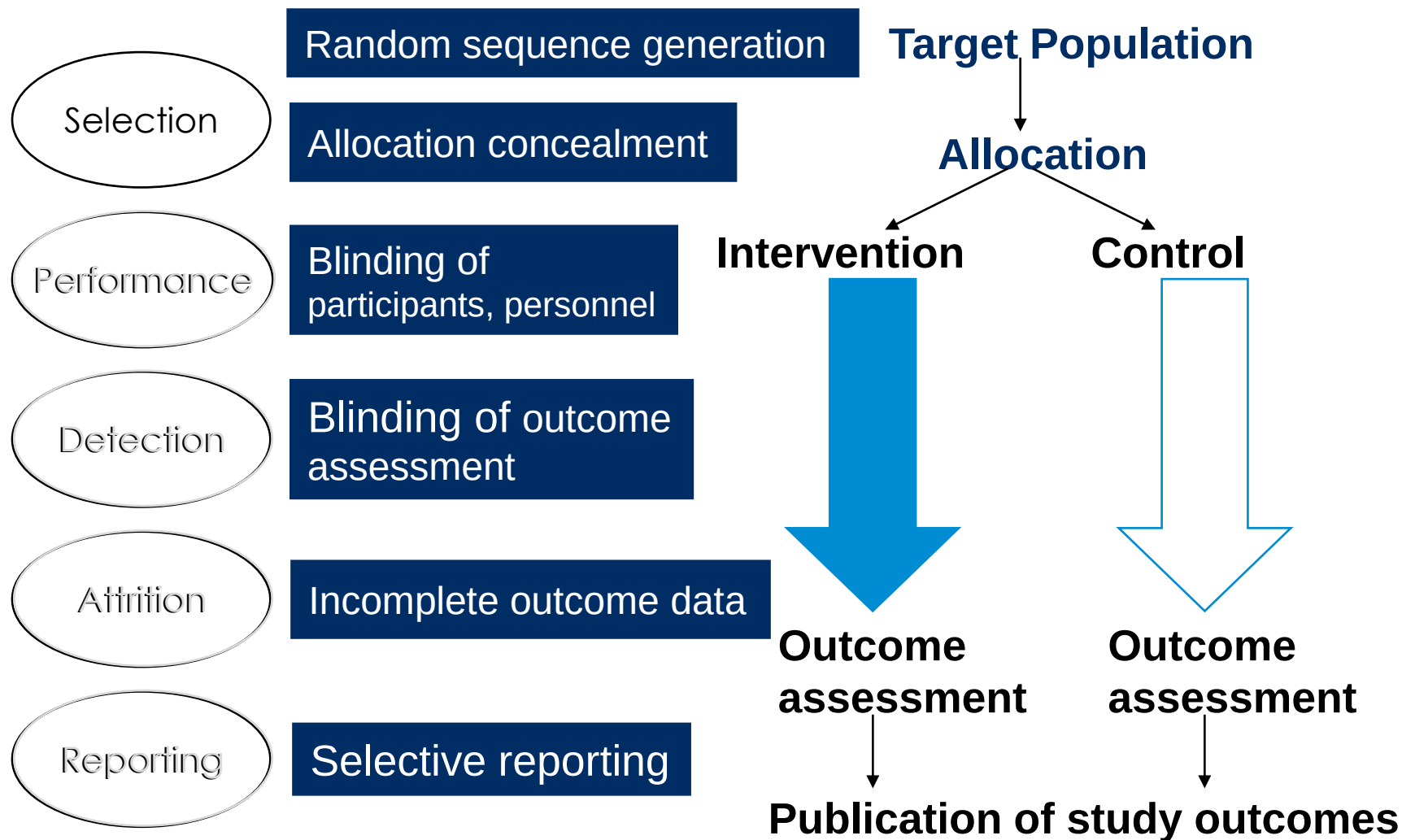


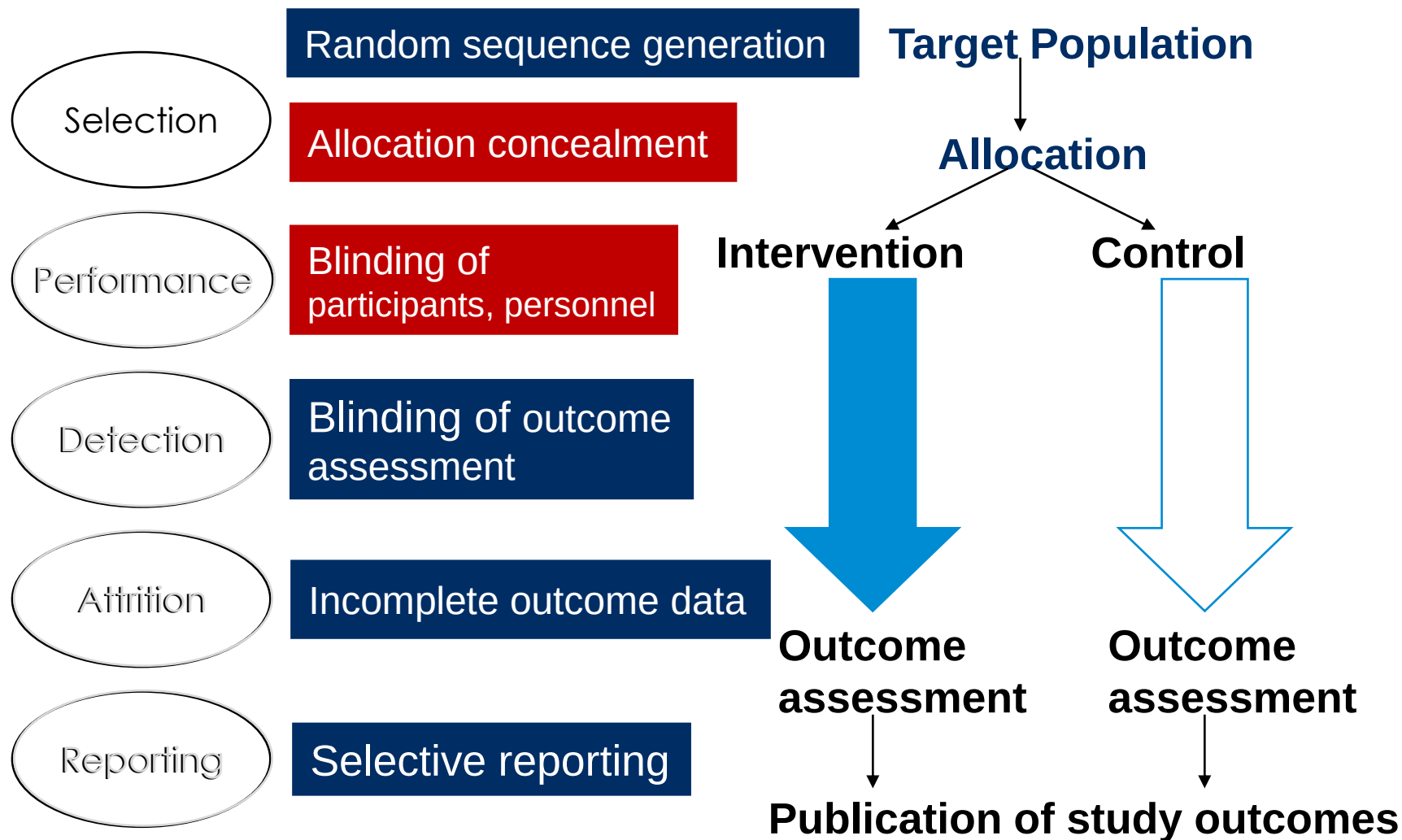
32 possible biases in research

- | | | |
|---|---|-------------------------------------|
| 1. Bias in concepts | 12. Berkson's bias | 23. Bias due to nonresponse |
| 2. Definition bias | 13. Bias in ascertainment or assessment | 24. Attrition bias |
| 3. Bias in design | 14. Interviewer bias or observer bias | 25. Bias in handling outliers |
| 4. Bias in selection of subjects | 15. Instrument bias | 26. Recording bias |
| 5. Bias due to concomitant medication or concurrent disease | 16. Hawthorne effect | 27. Bias in analysis |
| 6. Instruction bias | 17. Recall bias | 28. Bias due to lack of power |
| 7. Length bias | 18. Response bias | 29. Interpretation bias |
| 8. Bias in detection of cases | 19. Repeat testing bias | 30. Reporting bias |
| 9. 'Lead-time' bias | 20. Mid-course bias | 31. Bias in presentation of results |
| 10. Bias due to confounder | 21. Self-improvement effect | 32. Publication bias |
| 11. Contamination in controls | 22. Digit preference | |

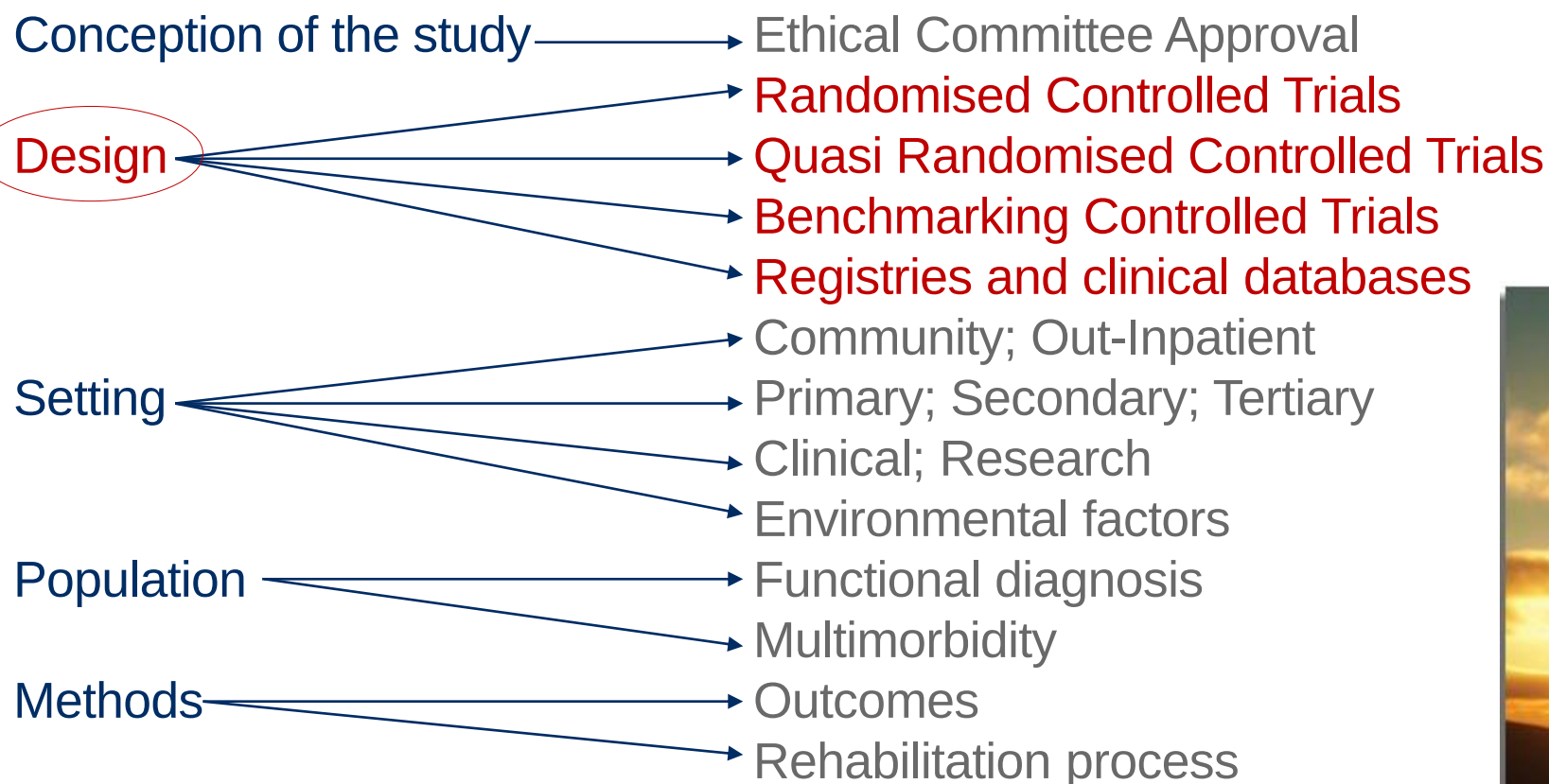
Frequent biases in PRM: 13/32

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Research problems in PRM



Benchmarking Controlled Trials

An **observational study** aiming to provide **non-biased estimates of differences** in real-world circumstances due to:

- **intervention(s)**
- **clinical pathways**
- **health care system(s)**

among a well-defined group of patients.

**ANN
MED**

Annals of Medicine, 2015; Early Online: 1–9
© 2015 Informa UK, Ltd.
ISSN 0785-3890 print/ISSN 1365-2060 online
DOI: 10.3109/07853890.2015.1027255

ORIGINAL ARTICLE

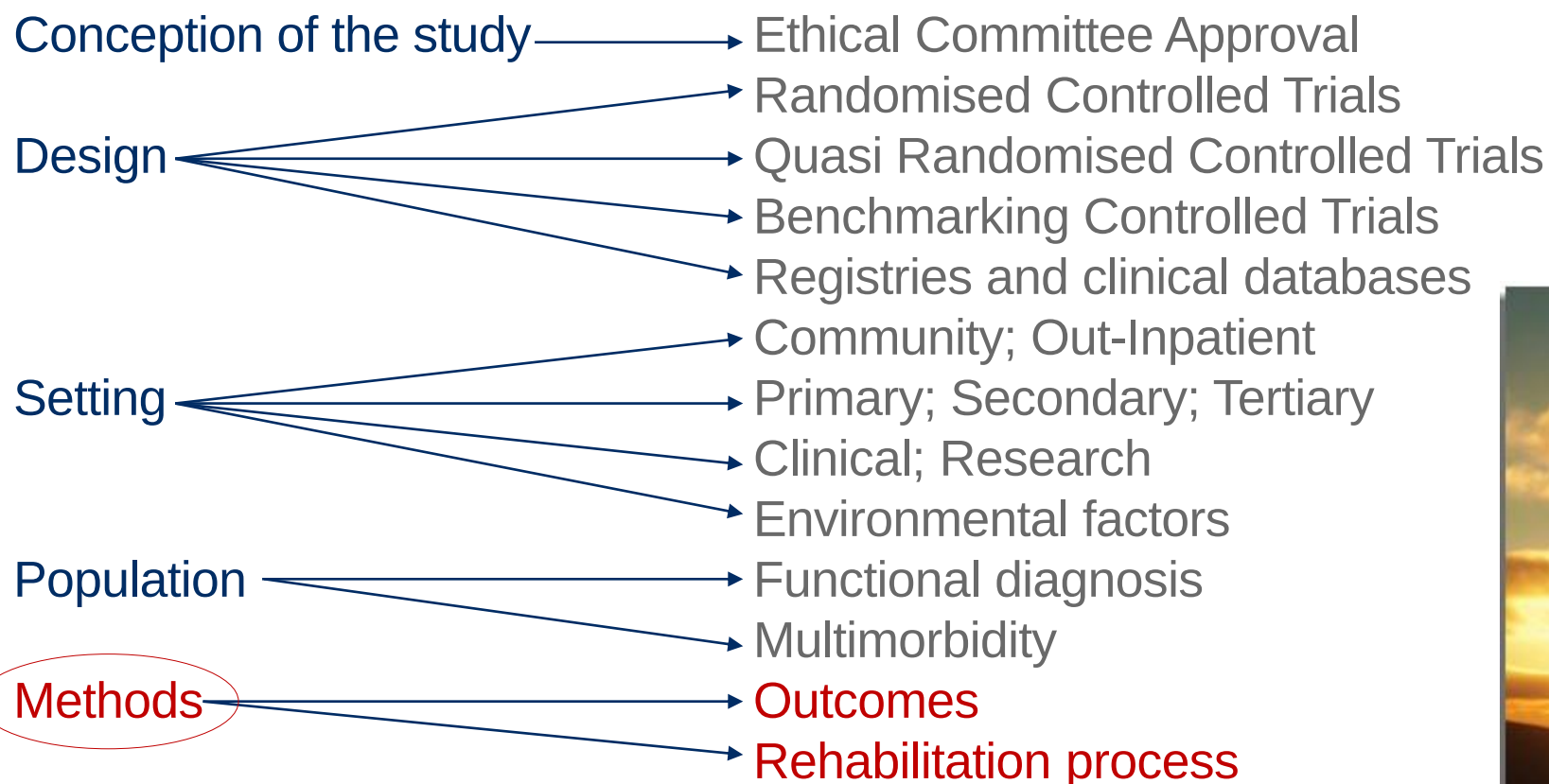
Benchmarking Controlled Trial—a novel concept covering all observational effectiveness studies

Antti Malmivaara

Centre for Health and Social Economics, National Institute for Health and Welfare, Helsinki, Finland



Research problems in PRM



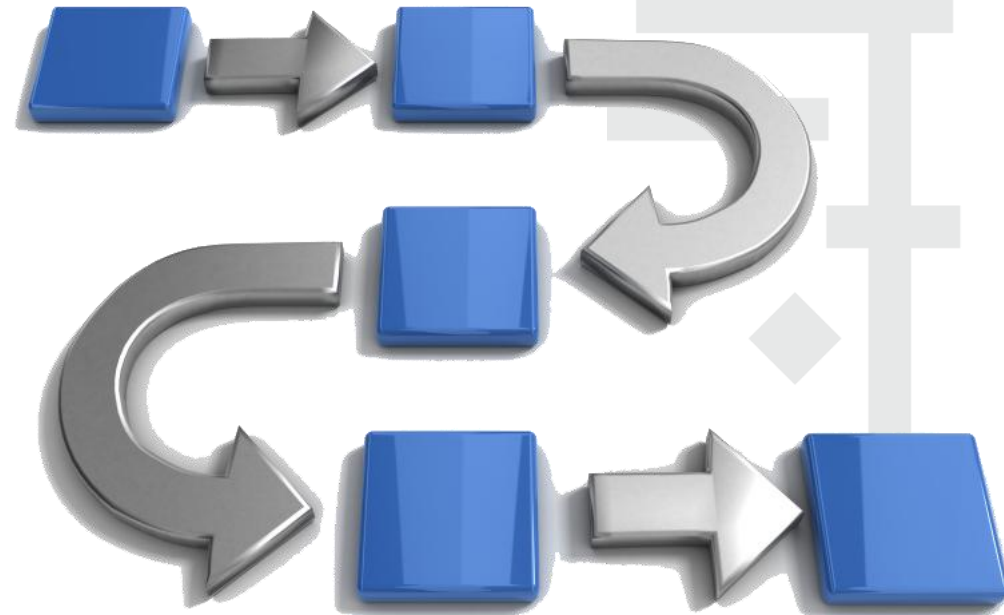
Rehabilitation process

Personal factors

- **Team**: multi-professional and interdisciplinary
- **Therapists'** competency and convincement
- **Patients'** convincement, compliance and adherence to treatment

Technical factors

- Low precision description (terminology and vocabulary)
- The Usual Therapy factor
- Multi-modal approach



Usual therapy (UT): the black box

Methods

- Systematic Review
- RCTs on rehabilitation for **lower limb after stroke** (2006-2016)

Results

- 86 papers (out of 1582)
- All treatments (13) checked only as «**adjunctive**» to UT
- **20 different treatments** included in the UT groups
- Treatments in UT ranged from 1 treatment (19%) to 7 treatments (4%): mode 3 treatments (24%)
- 1 time **3 papers of 3 different groups** had the same treatment (**gait, gait training**)
- 2 times **2 papers of 2 different groups** had the same treatment
- 18 different adjectives and 18 different nouns used to define UT
- In 2 articles 3 different definitions used, in 7 articles 2 different definitions



Usual therapy (UT): the black hole

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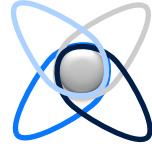
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Multimodal approach

Different treatments provided together

Same treatments combined differently by different teams





Multimodal approach

Different treatments provided together

Treatments combined differently by different teams

Their combination gives the final result



Research problems in PRM



PRM research methodological problems requires better understanding



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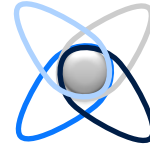
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- **State of research in PRM**

Implementation of EBM in PRM

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Some solutions for EBM in PRM





All MeSH Categories

Analytical, Diagnostic and Therapeutic Techniques and Equipment Category

Therapeutics

Patient Care

Continuity of Patient Care

Aftercare

Rehabilitation

Activities of Daily Living

Animal Assisted Therapy

Equine-Assisted Therapy

Art Therapy

Bibliotherapy

Cardiac **Rehabilitation**

Correction of Hearing Impairment

Communication Methods, Total

Lipreading

Manual Communication +

Dance Therapy

Early Ambulation

Exercise Therapy

Motion Therapy, Continuous Passive

Muscle Stretching Exercises

Plyometric Exercise

Resistance Training

Music Therapy

Neurological **Rehabilitation**

Stroke **Rehabilitation**

Occupational Therapy

Recreation Therapy

Rehabilitation of Speech and Language Disorders

Language Therapy

Myofunctional Therapy

Speech Therapy

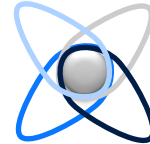
Speech, Alaryngeal +

Voice Training

Rehabilitation, Vocational

Telerehabilitation

Negrini S. Steady growth seen for research in physical and rehabilitation medicine: where our specialty is now and where we are going. Eur J Phys Rehabil Med. 2012 Dec;48(4):543-8.

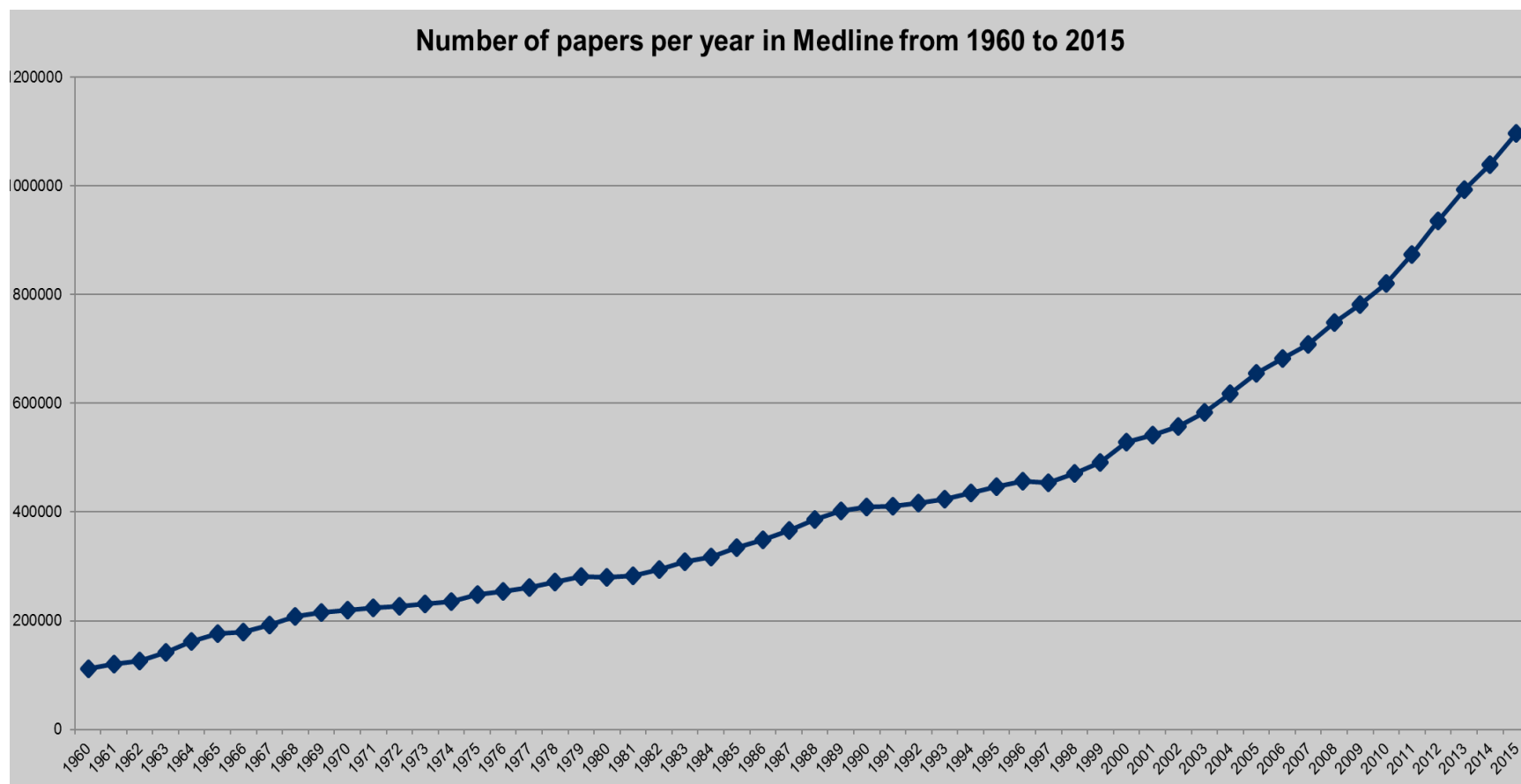


Steady growth of research

	Population	2000	2011	Change
PRM	PubMed	0.7%	1.5%	+114%
United States PRM	Country	1.7%	1.6%	+111%
United Kingdom PRM	Country	1.9%	1.7%	+113%
Germany PRM	Country	1.7%	1.1%	+150%
Canada PRM	Country	2.5%	1.9%	+128%
Australia PRM	Country	3.4%	1.8%	+195%
Italy PRM	Country	1.9%	0.9%	+207%
Netherlands PRM	Country	2.8%	1.8%	+155%
Japan PRM	Country	0.8%	0.6%	+138%
Sweden PRM	Country	3.4%	2.5%	+135%
France PRM	Country	1.2%	0.9%	+132%

Negrini S. Steady growth seen for research in physical and rehabilitation medicine: where our specialty is now and where we are going. Eur J Phys Rehabil Med. 2012 Dec;48(4):543-8.

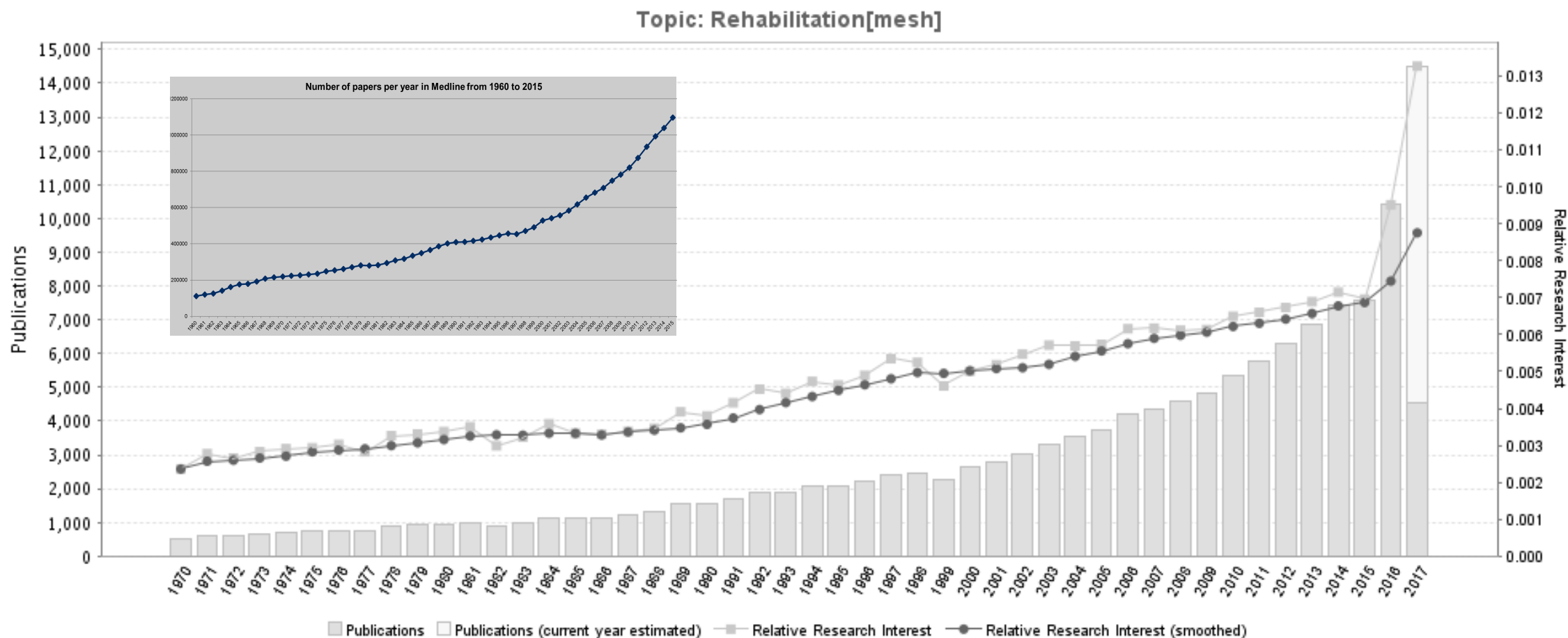
Growth of studies in PubMed



Research interest in Rehabilitation is growing

Search: Rehabilitation [Mesh]

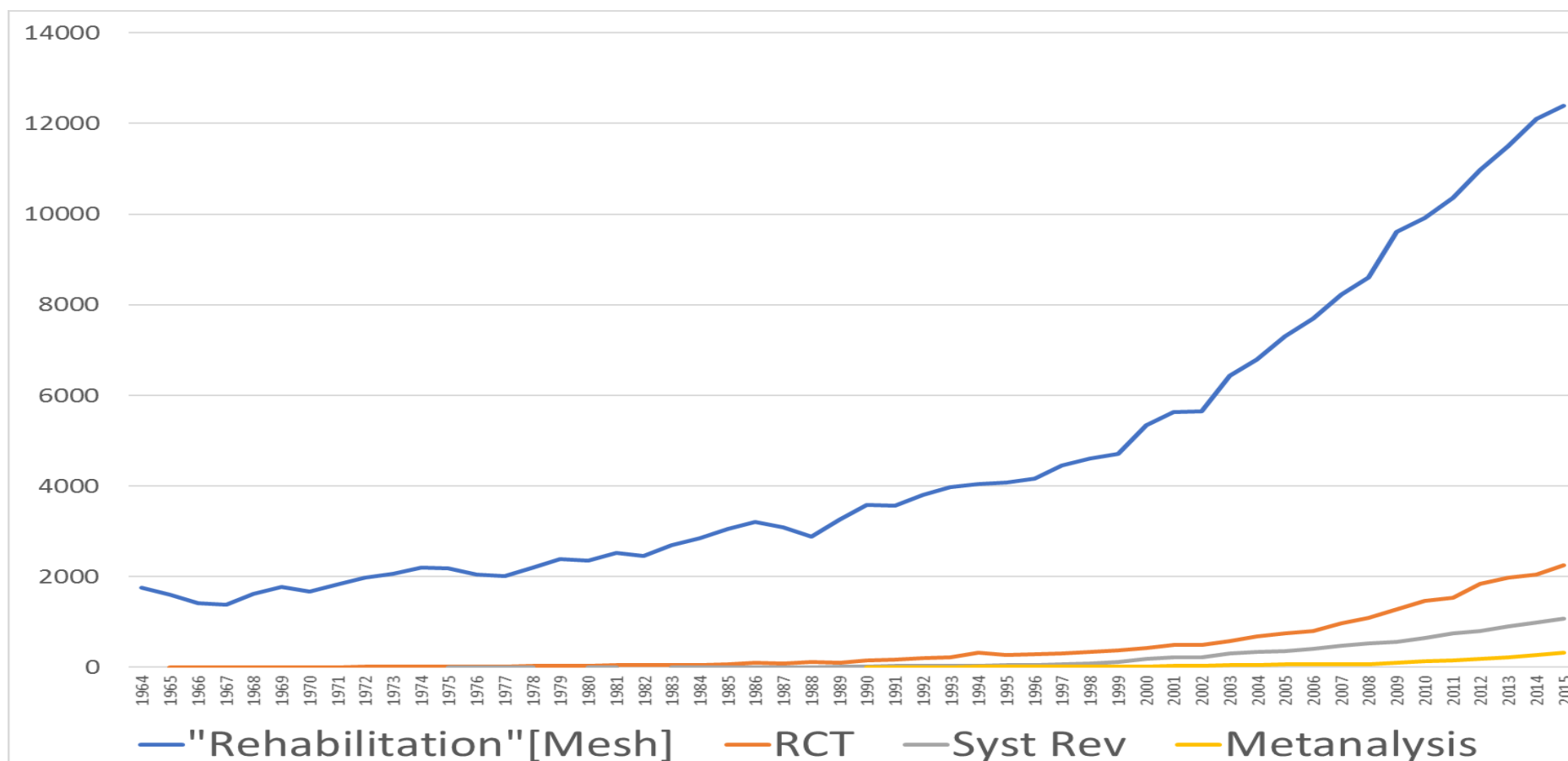
Source: www.gopubmed.org



Growth of type of studies in Rehabilitation

Search: Rehabilitation [Mesh]

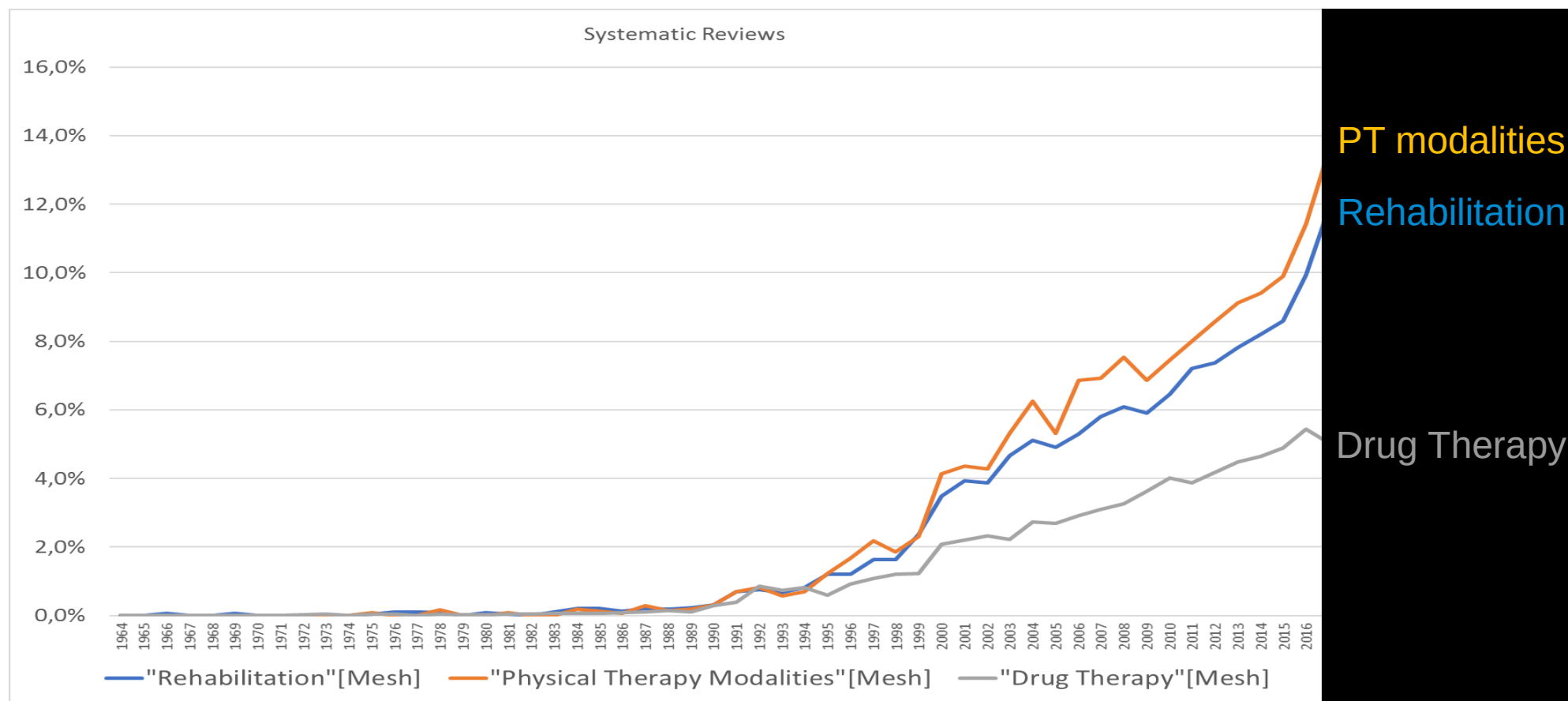
Filters: Randomized Controlled Trial,
Systematic Reviews, Meta-Analysis



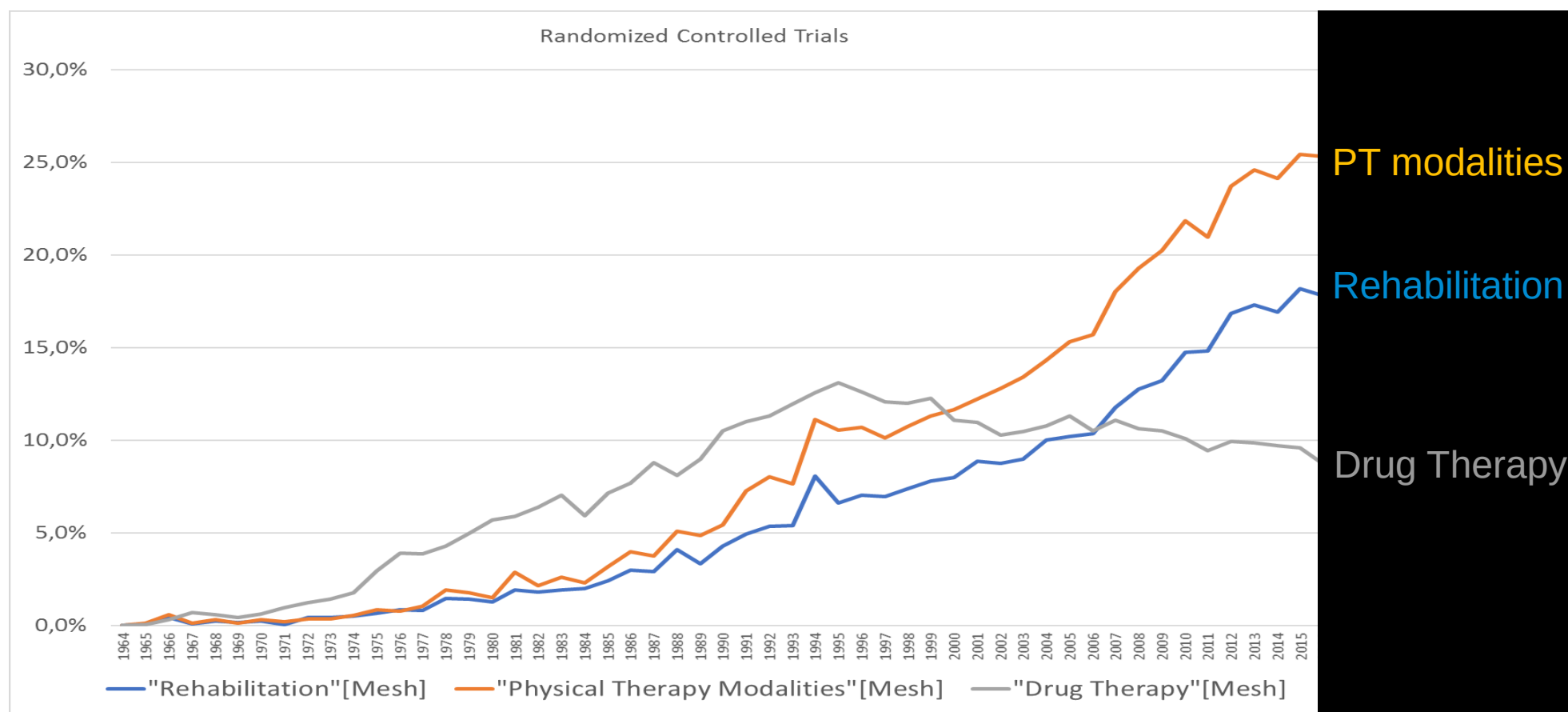
All studies
in Rehabilitation

RCTs
Systematic Reviews
Meta-analysis

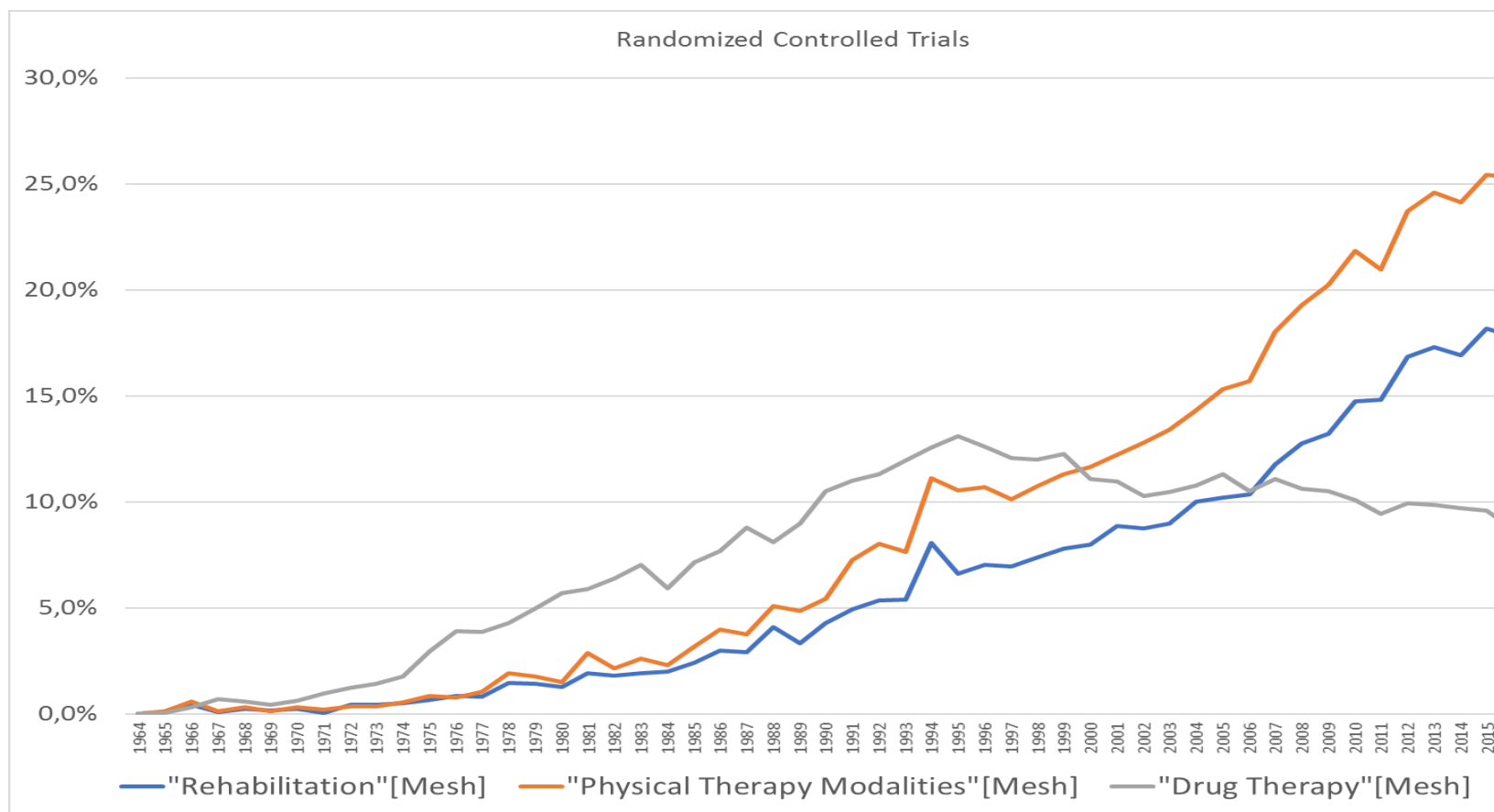
Relative research interest: SRs



Relative research interest: RCTs



What is Rehabilitation [Mesh] ?



Rehabilitation

[Activities of Daily Living](#)

[Animal Assisted Therapy](#)

[Equine-Assisted Therapy](#)

[Art Therapy](#)

[Bibliotherapy](#)

[Cardiac **Rehabilitation**](#)

[Correction of Hearing Impairment](#)

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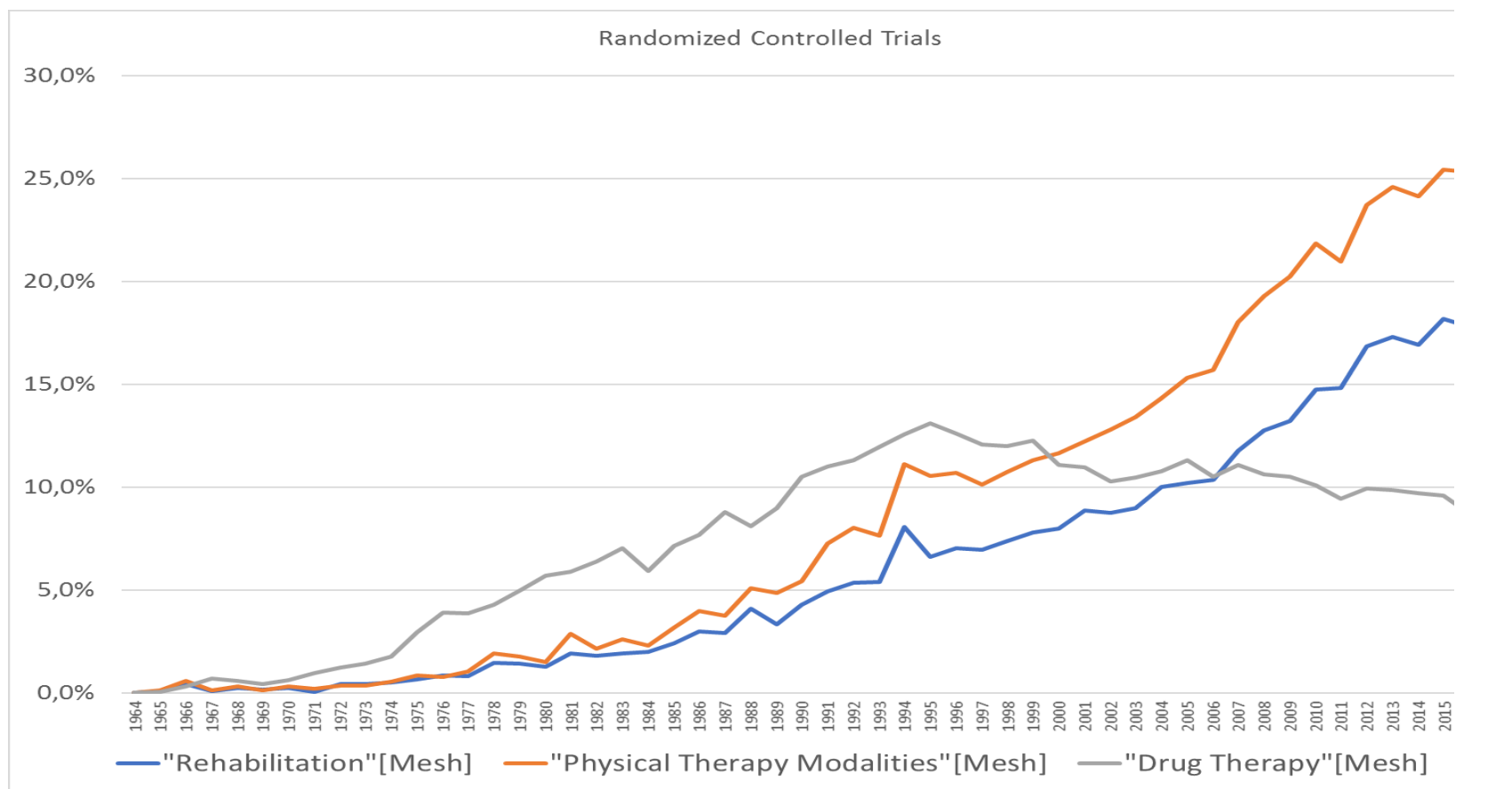
[Speech, Alaryngeal +](#)

[Voice Training](#)

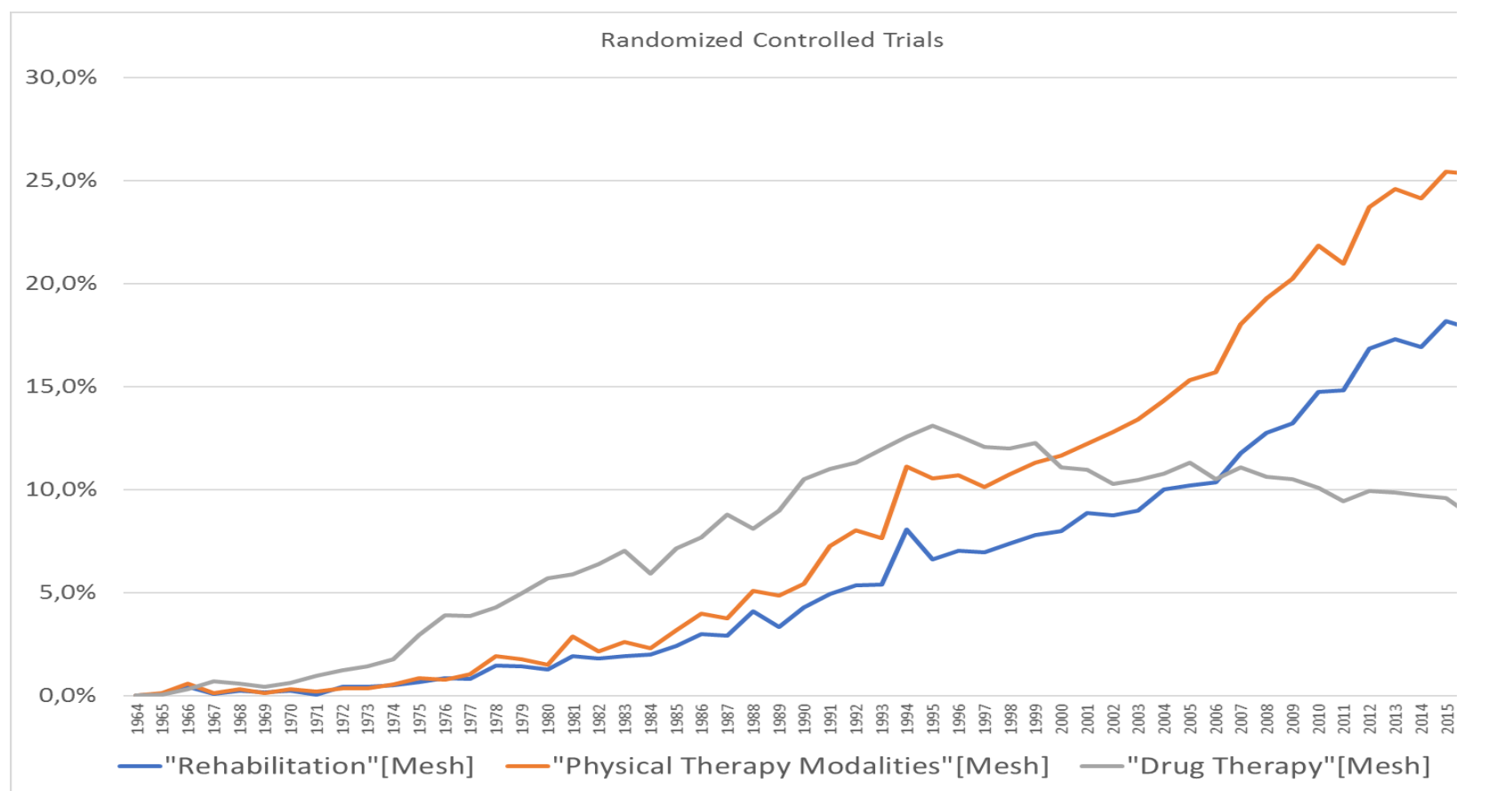
[Rehabilitation, Vocational](#)

[Telerehabilitation](#)

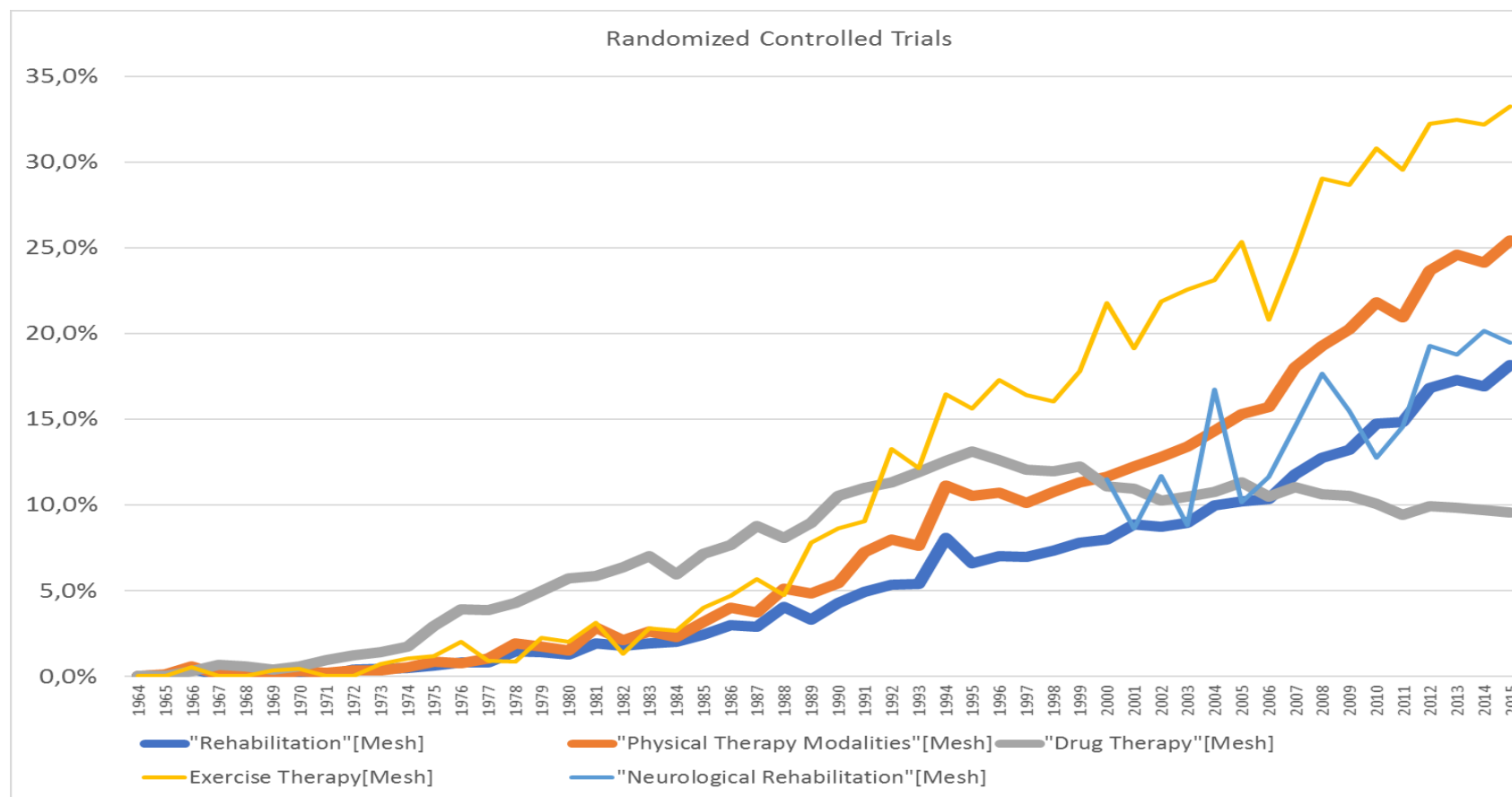
What is Rehabilitation [Mesh] ?



What is Rehabilitation [Mesh] ?



Relative research interest: RCTs



Exercise Therapy

PT modalities

Neurological rehabilitation
Rehabilitation

Drug Therapy

PRM is comparatively producing a lot of good research (RCTs and SRs)



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The Know-Do Gap

High quality evidence is not consistently applied in practice¹

Examples in **clinical practice**:

- Statins decrease mortality and morbidity in post-stroke, but they are under-prescribed²
- Antibiotics are overprescribed in children with upper respiratory tract symptoms³

Examples in **health system policies**:

- Evidence was not frequently used by WHO⁴ (not true for last rehabilitation guidelines)
- Out of 8 policymaking processes in Canada⁵
 - Only 1 was fully based on research
 - Other 3 were partially based on research

1. Majumdar SR et al. From knowledge to practice in chronic cardiovascular disease: a long and winding road. J Am Coll Cardiol. 2004; 43(10):1738-42
2. LaRosa JC et al. Effect of statins on the risk of coronary disease: a meta-analysis of randomized controlled trials. JAMA. 1999; 282(24): 2340-6
3. Arnold S et al. Interventions to improve antibiotic prescribing practices in ambulatory care. Cochrane Database Syst Rev. 2005: CD003539
4. Oxman A et al. Use of evidence in WHO recommendations. Lancet. 2007; 369(9576): 1883-9.
5. Lavis J et al. Examining the role of health services research in public policy making. Milbank Q. 2002; 80(1): 125-54

Knowledge Translation

A dynamic and interactive process that includes the **synthesis, dissemination, exchange, and ethically sound application** of knowledge to improve health, provide more effective health services and products, and strengthen the health care system

Canadian Institute of Health Research¹

Dissemination and implementation, implementation science, research use, knowledge transfer and uptake/exchange²

1. Mc Kibbin KA et al. A cross sectional study of the number and frequency of terms used to refer to knowledge translation in a body of health literature in 2006: a tower of Babel ? Impl Sci. 2010; 5:16.

2. www.cihr-irsc.gc.ca/e/29418.html.

Different audiences



Consumers and the public

Those seeking
health care, their
families and carers,
and the public



Practitioners

of health care
including clinicians
and public health
practitioners



Policy-makers & healthcare managers

making decisions
about health policy
within all levels of
management



Researchers & Research Funders

who need
information
regarding important
gaps in the evidence

Cochrane Knowledge Translation Strategy

April 2017



Trusted evidence.
Informed decisions.
Better health.



Cochrane Knowledge Translation Strategy

April 2017

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When Evidence is known, a Knowledge Translation effort is required



Overview

Evidence Based Medicine (EBM)

- The origin and reason for EBM
- Cochrane: the Gold Standard of EBM

Physical and Rehabilitation Medicine (PRM) and EBM

- PRM vs other medical specialties
- Problems with evidence generation in PRM
- State of research in PRM

Implementation of EBM in PRM

- Knowledge Translation
- **Cochrane Rehabilitation**

Some solutions for EBM in PRM



Cochrane Organization

Review Groups: systematic reviews

Methods Groups: development of methods for reviews

Centres: local knowledge translation

Fields and Networks: knowledge translation for a specific health community other than a condition





56 Cochrane Review Groups

- | | | | |
|---|---|---|--|
| 1. Acute Respiratory Infections Group | 15. Developmental, Psychosocial and Learning Problems Group | 26. Hepato-Biliary Group | 40. Neonatal Group |
| 2. Airways Group | 16. Drugs and Alcohol Group | 27. HIV/AIDS Group | 41. Neuromuscular Group |
| 3. Anaesthesia, Critical and Emergency Care Group | 17. Effective Practice and Organisation of Care Group | 28. Hypertension Group | 42. Oral Health Group |
| 4. Back and Neck Group | 18. ENT Group | 29. IBD Group | 43. Pain, Palliative and Supportive Care Group |
| 5. Bone, Joint and Muscle Trauma Group | 19. Epilepsy Group | 30. Incontinence Group | 44. Pregnancy and Childbirth Group |
| 6. Breast Cancer Group | 20. Eyes and Vision Group | 31. Infectious Diseases Group | 45. Public Health Group |
| 7. Childhood Cancer Group | 21. Fertility Regulation Group | 32. Injuries Group | 46. Schizophrenia Group |
| 8. Cochrane Response | 22. Gynaecological, Neuro-oncology and Orphan Cancer Group | 33. Kidney and Transplant Group | 47. Skin Group |
| 9. Colorectal Cancer Group | 23. Gynaecology and Fertility Group | 34. Lung Cancer Group | 48. STI Group |
| 10. Common Mental Disorders Group | 24. Haematological Malignancies Group | 35. Metabolic and Endocrine Disorders Group | 49. Stroke Group |
| 11. Consumers and Communication Group | 25. Heart Group | 36. Methodology Review Group | 50. Test CRG |
| 12. Covidence Review Group | | 37. Movement Disorders Group | 51. Tobacco Addiction Group |
| 13. Cystic Fibrosis and Genetic Disorders Group | | 38. Multiple Sclerosis and Rare Diseases of the CNS Group | 52. Upper GI and Pancreatic Diseases Group |
| 14. Dementia and Cognitive Improvement Group | | 39. Musculoskeletal Group | 53. Urology Group |
| | | | 54. Vascular Group |
| | | | 55. Work Group |
| | | | 56. Wounds Group |

4 with >20 reviews of PRM interest

1. Back and Neck
2. Bone, Joint and Muscle Trauma
3. Musculoskeletal
4. Stroke



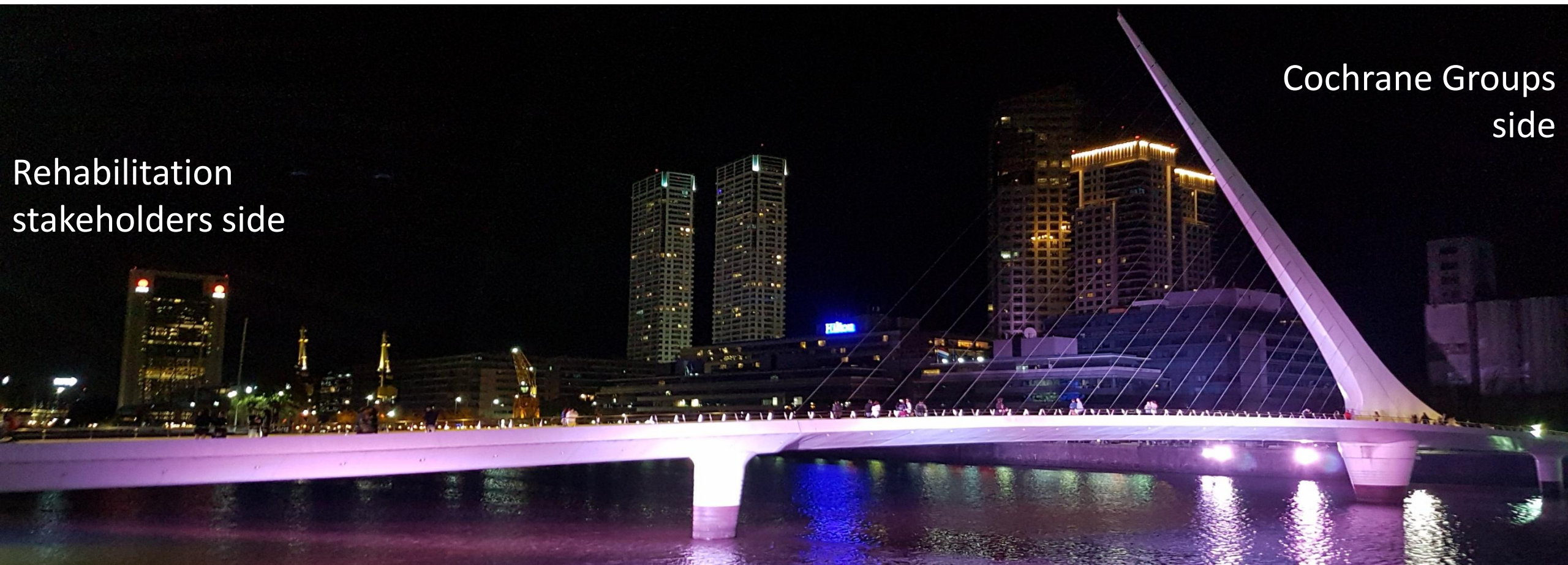
28 with ≥ 1 reviews of PRM interest

- | | |
|--|---|
| 1. Acute Respiratory Infections | 15. Incontinence |
| 2. Airways | 16. Injuries |
| 3. Back and Neck | 17. Kidney and Transplant |
| 4. Bone, Joint and Muscle Trauma | 18. Lung Cancer |
| 5. Breast Cancer | 19. Movement Disorders |
| 6. Cystic Fibrosis and Genetic Disorders | 20. Multiple Sclerosis and Rare Diseases of the CNS |
| 7. Dementia and Cognitive Improvement | 21. Musculoskeletal |
| 8. Developmental, Psychosocial and Learning Problems | 22. Neonatal |
| 9. Ear Nose and Throat disorders | 23. Neuromuscular |
| 10. Eyes and Vision | 24. Pain, Palliative and Supportive Care |
| 11. Gynaecological, Neuro-oncology and Orphan Cancer | 25. Pregnancy and Childbirth |
| 12. Gynaecology and Fertility | 26. Stroke |
| 13. Heart | 27. Vascular |
| 14. HIV/AIDS | 28. Wounds |



Role of Cochrane Fields a bridge

- facilitate work of Cochrane Review Groups
- ensure that Cochrane reviews are both relevant and accessible to their fellow specialists and consumers



Rehabilitation
stakeholders side

Cochrane Groups
side

Vision

All **rehabilitation professionals** can apply Evidence Based Clinical Practice

Decision makers will be able to take decisions according to the best and most appropriate evidence

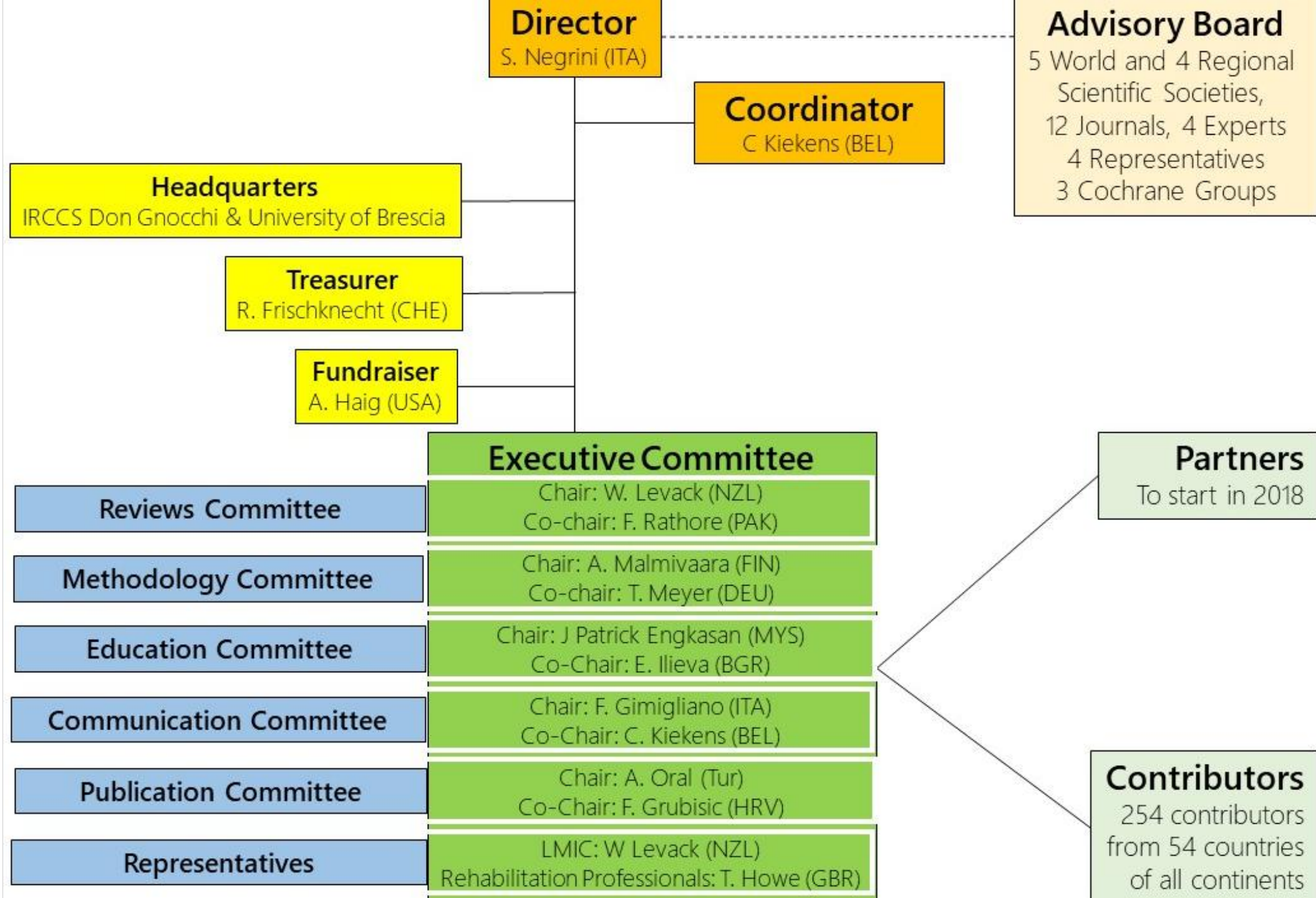


Mission

Allow all rehabilitation professionals to combine the best available **evidence** as gathered by high quality Cochrane systematic reviews, with their own **clinical expertise** and the **values of patients**

Improve the methods for evidence synthesis, to make them coherent with the needs of disabled people and daily clinical practice in rehabilitation.





The Executive Committee

1. Stefano Negrini, MD (Italy) – Director
2. Carlotte Kiekens, MD (Belgium) – Coordinator
3. Francesca Gimigliano, MD, PhD (Italy) – Communication Com
4. Frane Grubisic, MD (Croatia) – Publication Com
5. Tracey Howe, PT (United Kingdom) – Professional representative
6. Elena Ilieva, MD, PhD (Bulgaria) – Education Com
7. William Levack, PT, PhD (New Zealand) – Reviews Com
8. Antti Malmivaara (Finland) – Method Com
9. Thorsten Meyer, Psy, PhD (Germany) – Method Com
10. Aydan Oral, MD (Turkey) – Publication Com
11. Julia Patrick Engkasan, MD (Malaysia) – Education Com
12. Farooq Rathore, MD (Pakistan) – Reviews Com; LMIC representative



Advisory Board

3 Cochrane Groups

5 World Scientific Societies

4 Regional Scientific Societies

11 Scientific Journals

4 Experts

- China, Colombia, Switzerland, US

4 Representatives

- 2 LMIC, 2 rehab professionals

ISPO

ISPRM

WCPT

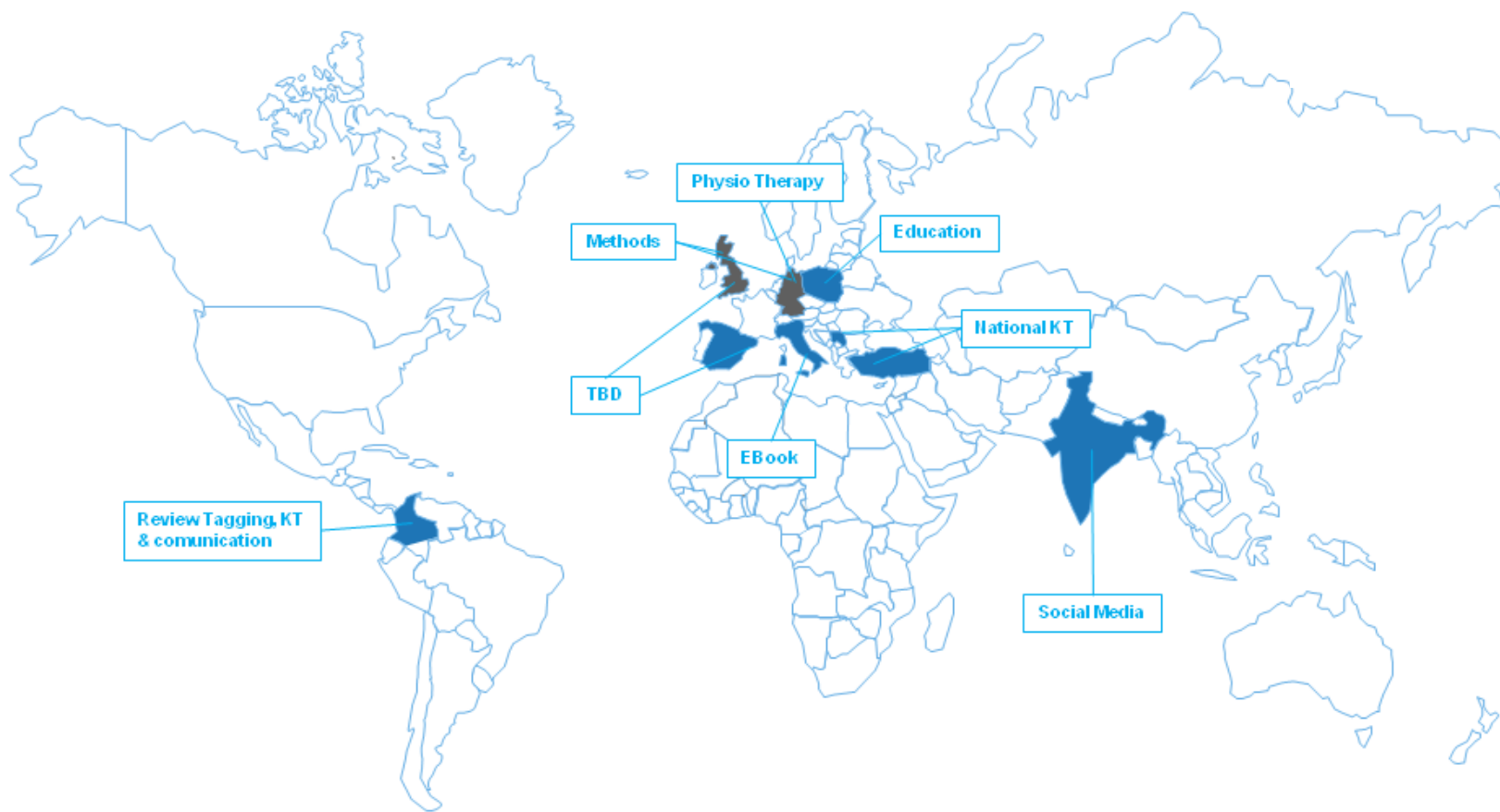
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WFOT





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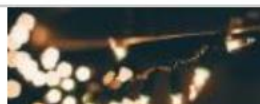
- ◆ New learning opportunities in evidence-based health care for medical students in Sweden
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Evidence

List of Cochrane reviews of rehabilitation interest.

Full list

By Subtopic

New - Updated

(Stage filter not available for Subtopic view)

By subtopic:

▼ Health Conditions (100)

▶ Cardiac (3)

▶ Gynaecology or Urology (1)

▶ Mental Health (1)

▶ Neurological (26)

▶ Older Adults (>65 years) (16)

▶ Oncology (3)

▶ Orthopaedic or musculoskeletal (incl. pain conditions) (29)

▶ Other (5)

▶ Paediatrics (<18 years) (11)

Scrivi qui per eseguire la ricerca

16:19

15/02/2018

2

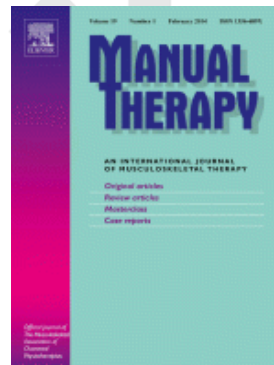
Publications

Pre launch (2015-6)

- Negrini S, et al. Eur J Phys Rehabil Med. 2015 Jun;51(3):239-43.
- Kiekens C, et al. Am J Phys Med Rehabil. 2016 Apr;95(4):235-8.
- Negrini S, et al. Eur J Phys Rehabil Med. 2016 Jun;52(3):417-8.
- Negrini S, et al. Phys Ther. 2016 Jul;96(7):1109-10.
- Negrini S, et al. Arch Phys Med Rehabil. 2016 Aug;97(8):1226-7.
- Negrini S, et al. Man Ther. 2016 Dec;26:vii-viii.

Post launch

- Levack WM, et al. Eur J Phys Rehabil Med. 2017 Oct;53(5):814–7.
- Negrini S, et al. Eur J Phys Rehabil Med. 2017 Oct;53(5):812–3.
- Negrini S, et al. Arch Phys Med Rehabil. 2017 Dec 11.
- Negrini S, et al. Am J Phys Med Rehabil. 2018 Jan;97(1):68-71.



Publications

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- Negrini S, et al. Eur J Phys Rehabil Med. 2015 Jun;51(3):239-
- Kiekens C, et al. Am J Phys Med Rehabil. 2016 Apr;95(4):235
- Negrini S, et al. Eur J Phys Rehabil Med. 2016 Jun;52(3):417-
- Negrini S, et al. Phys Ther. 2016 Jul;96(7):1109-10.
- Negrini S, et al. Arch Phys Med Rehabil. 2016 Aug;97(8):1226
- Negrini S, et al. Man Ther. 2016 Dec;26:vii-viii.

Post launch

- Levack WM, et al. Eur J Phys Rehabil Med. 2017 Oct;53(5):81
- Negrini S, et al. Eur J Phys Rehabil Med. 2017 Oct;53(5):812-
- Negrini S, et al. Arch Phys Med Rehabil. 2017 Dec 11.
- Negrini S, et al. Am J Phys Med Rehabil. 2018 Jan;97(1):68

AMERICAN JOURNAL OF Physical Medicine & Rehabilitation

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Figure showing a person in a wheelchair, likely related to the journal's focus on physical medicine and rehabilitation.

- Lumbosacral Plexopathy and Pelvic Fractures
- Pain in Individuals with Disabilities
- Sphincter Dysynergia in Spinal Cord Injury
- Distal Variation in Carpal Tunnel Syndrome
- Conservative Treatment of Frozen Shoulder
- Bores: Models to Teach US-Guided Injections



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Issue 2 | September 2017

Cochrane Rehabilitation serves as a bridge between all the stakeholders in Rehabilitation and Cochrane.

The Global Evidence Summit 2017



My experience as a PhD student at the Global Evidence Summit 2017

An African proverb says: "If you want to go fast, go alone, if you want to go far, go together".

My name is **Chiara** and last year I started my PhD in Brescia (Italy) on Evidence Based Medicine, dedicating most of my time to Cochrane Rehabilitation. This year I attended for the first time a Global Evidence Summit.

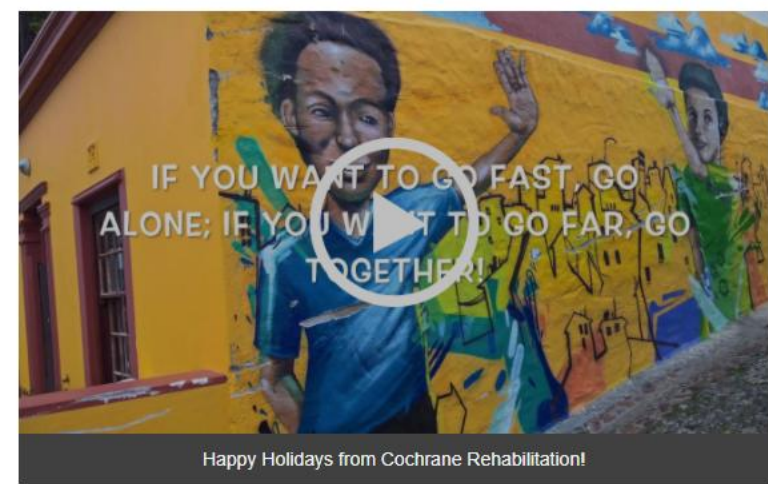


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Issue 3 | December 2017

Cochrane Rehabilitation serves as a bridge between all the stakeholders in Rehabilitation and Cochrane.

The first year of Cochrane Rehabilitation



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Issue 4 | January 2018

Cochrane Rehabilitation serves as a bridge between the Rehabilitation community and stakeholders and Cochrane

The Latest Cochrane Systematic Reviews relevant to Rehabilitation

Cochrane Rehabilitation **Fitness training for cardiorespiratory conditioning after traumatic brain injury**

Cardiorespiratory exercise programmes may improve cardiorespiratory fitness in people after traumatic brain injury. It is uncertain whether they improve depression, cognition or fatigue or whether there are any adverse effects.

Cochrane Review: 8 studies with 399 people with traumatic brain injury of any age or severity, comparing cardiorespiratory exercise prescribed alone vs usual care, a non-exercise intervention or no intervention.

Cochrane Review by: Cochrane Injuries

rehabilitation.cochrane.org | [@CochraneRehab](https://twitter.com/CochraneRehab) | [#CochraneEvidence](https://www.facebook.com/CochraneEvidence) <http://bit.ly/2Ez2CQ>

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Yoga for stroke rehabilitation



We are uncertain whether yoga improves quality of life, balance, gait, depression, anxiety and disability in stroke survivors. Whether or not yoga has any adverse effects is also uncertain.

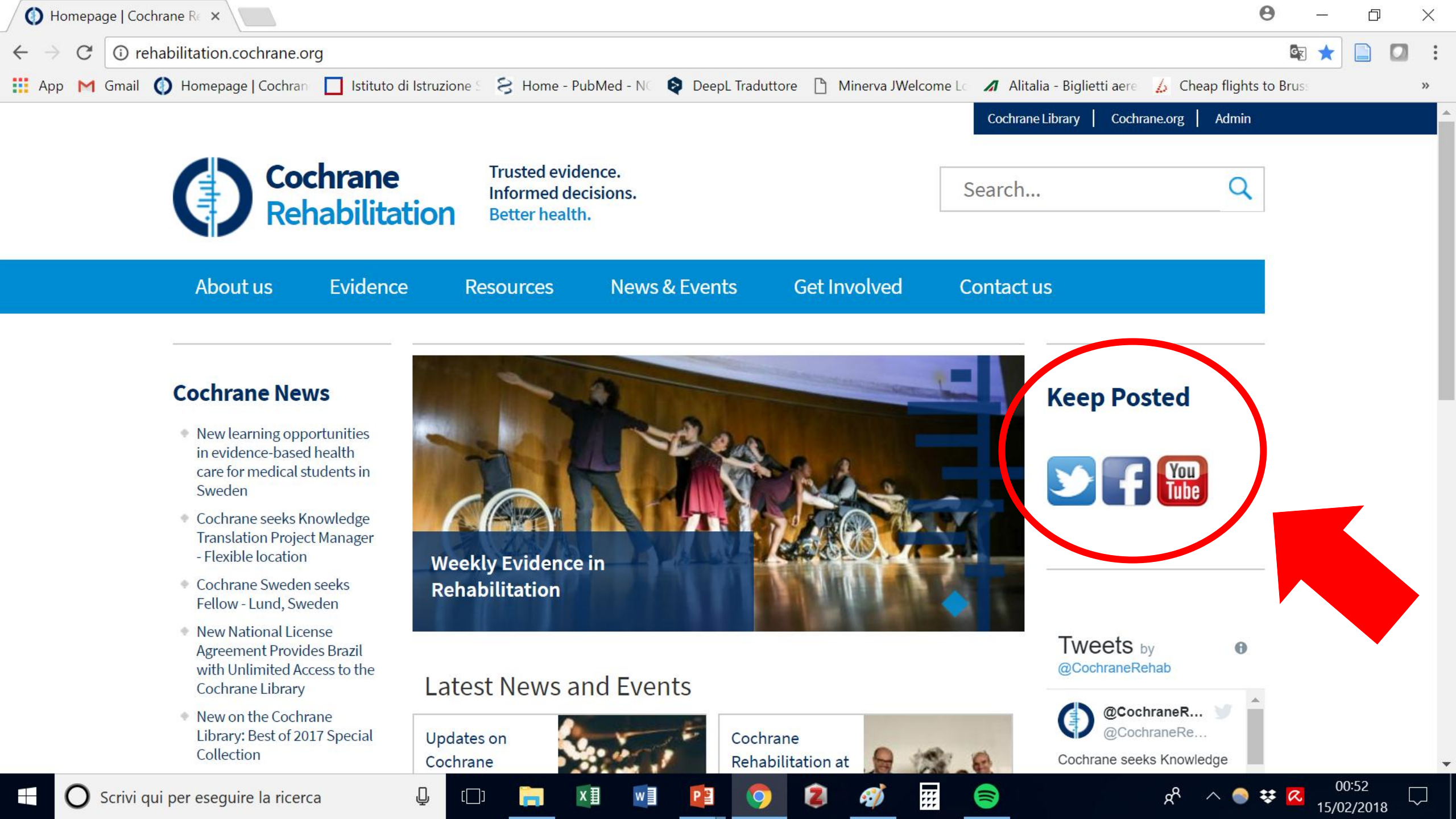


Cochrane Review; two studies with 72 people comparing yoga vs waiting-list control in adults with stroke.

Cochrane Review by: Cochrane Stroke Group

rehabilitation.cochrane.org | @CochraneRehab | #CochraneEvidence <http://bit.ly/2BR580B>

Yoga for stroke rehabilitation



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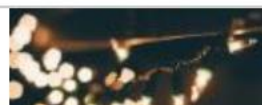
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Headquarter of Cochrane Rehabilitation in Italy

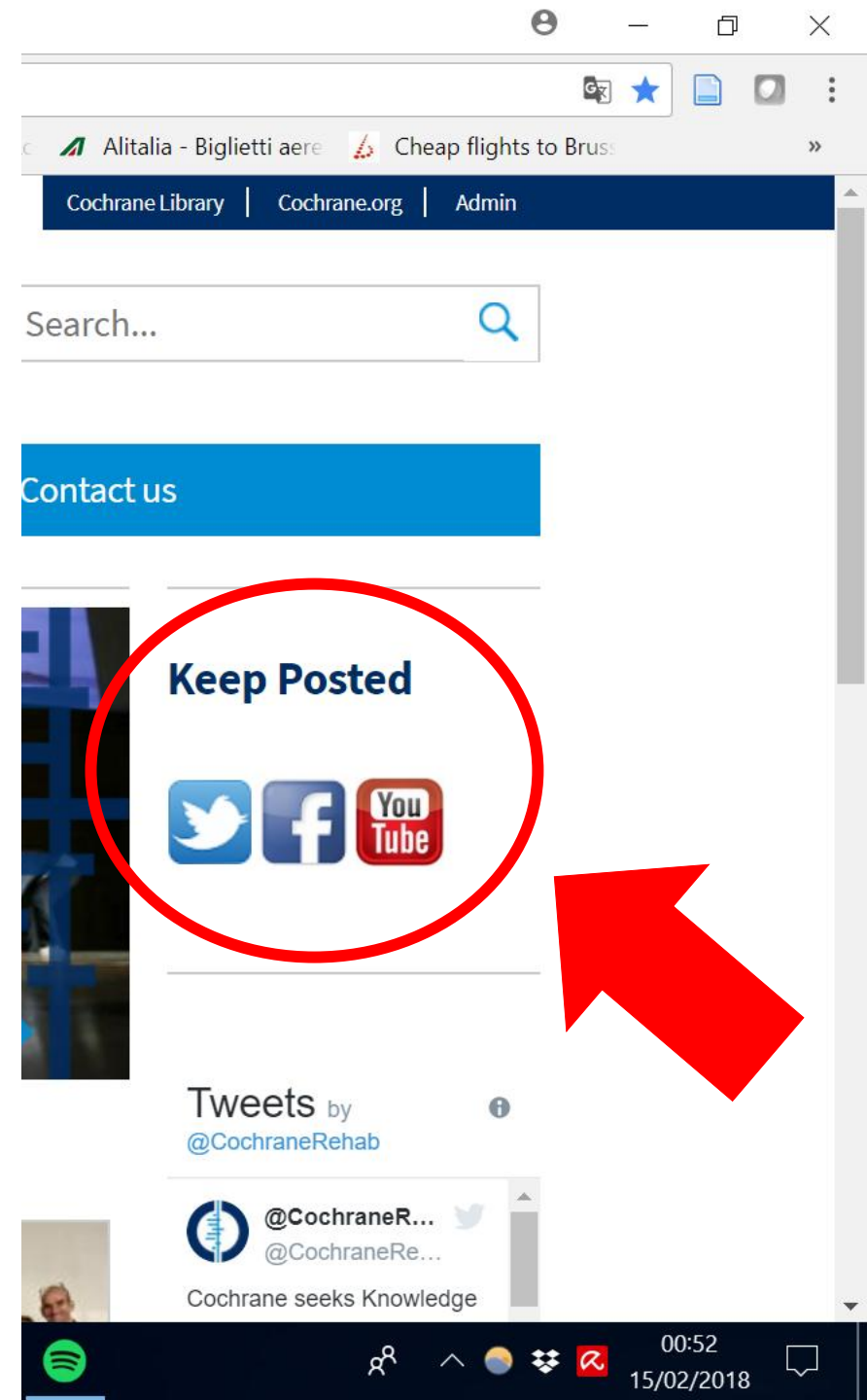


Rehabilitation Centre "E. Spalenza-Don Gnocchi", Largo Paolo VI, Rovato (Brescia), Italy

Email: cochrane.rehabilitation@gmail.com

Twitter: [@CochraneRehab](https://twitter.com/CochraneRehab)

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Call for Bloggers

Dear Cochrane Rehabilitation Community Member,

[View this email in your browser](#)



Trusted evidence. Informed decisions. Better health.

Call for translators of Communication material of Cochrane Rehabilitation

Dear Cochrane Rehabilitation Community member,

We are now proceeding with the production and dissemination of materials on Cochrane and Cochrane Rehabilitation.

In order to spread these contents to all people involved in the rehabilitation world we are looking for colleagues willing to collaborate with us in the translation activities. These will include for the moment mainly:

- **Cochrane Rehabilitation Website**
- **Newsletters**

If you are interested in collaborating more actively with Cochrane Rehabilitation, we invite you to answer to this email, attaching a **short Curriculum Vitae** (1 page maximum), and a **statement about why you are interested** in this activity, what is your experience and how you would like to perform the work. You should also state the language of translation.

Due to the Networking strategy and the need to collaborate also with the national Cochrane Centers and Scientific Societies, it will be important to have a contact and work in agreement with them: this will be established as soon as we will have the

[View this email in your browser](#)



Cochrane Rehabilitation Headquarters
Rehabilitation Centre "E. Spalenza"
Don Carlo Gnocchi Foundation
Largo Paolo VI
Rovato (BS)-25038
Italy

Call for Review Tagging activities of Cochrane Rehabilitation

Dear Cochrane Rehabilitation Community member,

Help wanted! The Cochrane Rehabilitation Review Committee is in the process of [tagging all rehabilitation relevant reviews](#) in the Cochrane database. The purpose of this work is to make these reviews more accessible to people involved in the work of rehabilitation. Eventually we may explore categorizing these reviews by intervention and outcome types, but to begin with, we first have to find them.

We are crowd sourcing the work of tagging reviews. We have set an online database where users can sign up to contribute to the work of tagging reviews. A minimum of two people from different professional backgrounds will tag each review, and differences of opinion in tagging will be resolved by the Cochrane Rehabilitation Review Committee. Reviews relevant to rehabilitation will appear on the Cochrane Rehabilitation website under our section on ["Evidence"](#).

What is involved?

To see the kind of work that is involved, check out our instruction video for Cochrane Review taggers, [click here](#).

Who can be involved?

We are wanting input from rehabilitation experts who might be physicians, nurses, or allied health professionals.

How do i get involved?

In the rehabilitation world, there is **wide-spread diffidence** towards Cochrane Reviews and their results. → One aim of Cochrane Rehabilitation is to change this attitude while increasing quantity and quality of Cochrane Reviews in this field.

According to the World Health Organization (WHO), Rehabilitation is a set of measures that assist individuals, who experience or are likely to experience disability, to achieve and maintain optimum functioning in interaction with their environments.



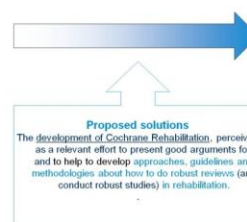
Rehabilitation aim: allowing **participation** through reduction of **impairments** (body damages) and **Activity limitations** (impossibility to perform «normal» activities of the human being), and control of **environment and personal factors**.

Our study

We performed a **survey** among Cochrane Reviews authors who joined Cochrane Rehabilitation to understand the problems they reported about evidence

Problems with evidence in Rehabilitation

1. Due to rehabilitation interventions
 -complex, and always include multiple individualised treatments
 -are difficult to standardise
 -different components and contents
 -"standard care" (usual comparison group) not defined
2. Due to RCTs designs
 -complex
 -unfeasible for some clinical questions
3. Due to Cochrane Reviews
 -evidence in Rehabilitation is systematically downgraded due to unavoidable characteristics of rehabilitation (e.g. lack of blinding)
4. Due to Cochrane Review Groups
 -reduced interest in rehabilitation topics, leading to low priority
 -difficult to find the appropriate Cochrane Review Group for rehabilitation interventions



Conclusion about reported problems

These problems are believed to make it **difficult to perform Cochrane Reviews** and to have them **accepted by Cochrane Review Groups**.
 There is a perception of **frustration** and **difficulty** in working with Cochrane. Nevertheless, there is agreement that **Cochrane provides an essential role** in evidence-based rehabilitation.
 Responders believed that, despite the problems, their published Cochrane Reviews have been useful for the world of clinical rehabilitation.
 It was recognised that the problems conducting Cochrane Reviews in rehabilitation are **common to other fields**, where complex interventions are proposed.

Actions of Cochrane Rehabilitation to answer these questions

Identifying and spreading the **knowledge of existing Cochrane Reviews** (Review tagging, Publication and Communication Committees)
 Increasing specific **knowledge about evidence** (Education Committee).

Working with a specific **Methodological Committee** that:

- 1) produced a more detailed **survey to identify the areas of action**: in publication in the European Journal of Physical and Rehabilitation Medicine
- 2) is working on a **discussion paper** about problems with RCT in Rehabilitation
- 3) is developing **focus groups, email discussions** on specific methodological issues in Rehabilitation
- 4) is starting one day **meetings involving methodological expert to define solutions for specific problems**.

Cochrane Rehabilitation Team: cochrane.rehabilitation@gmail.com

Methodology Committee

A think tank to help solving problems of EBM in PRM

Already done:

- Two surveys on EBM problems in Rehabilitation
- One poster at the Global Evidence Summit
- First Cochrane Rehabilitation Corner paper in the European Journal of Physical and Rehabilitation Medicine (October 2017)

Yearly journal special issues and/or sections on methodology:

- First one in EJPRM after Catalyst 2-days Workshop before ISPRM Paris

Cochrane Corners

EUROPEAN JOURNAL OF PHYSICAL AND REHABILITATION MEDICINE

MEDITERRANEAN JOURNAL
OF PHYSICAL
AND REHABILITATION MEDICINE
formerly
EUROPA MEDICOPHYSICA

VOLUME 48 - No. 4 - DECEMBER 2012



Official Journal of

Italian Society of Physical and Rehabilitation Medicine (SIMFER)

European Society of Physical Medicine and Rehabilitation (ESPRM)

European Union of Medical Specialists - Physical and Rehabilitation Medicine Section (UEMS - PRM)

Mediterranean Forum of Physical and Rehabilitation Medicine (MFPRM)

In association with

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Improving lives through
interdisciplinary rehabilitation research



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January 2015

Volume 90 • Number 1

AMERICAN JOURNAL OF Physical Medicine & Rehabilitation

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1. The authors have no financial or personal relationships with any other individuals or organizations that could inappropriately influence or bias the work reported in this article.

- Lumbosacral Plexopathy and Pelvic Fractures
- Pain in Individuals with Disabilities
- Sphincter Dysynergia in Spinal Cord Injury
- Distal Variation in Carpal Tunnel Syndrome
- Conservative Treatment of Frozen Shoulder
- Borescopic Models to Teach US-Guided Injections



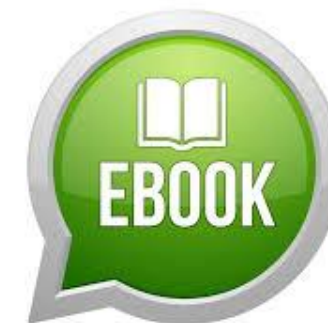
Official Journal of the

Association of Academic Physiatrists

WESLEY, MINNAPOLIS, LEAN

An Official Journal of The Association of Medical Librarians in Rehabilitation

Wolters Kluwer



Cochrane Rehabilitation e-book

“Live” e-book available for free in Internet to be constantly updated

- In collaboration with and funded by the European PRM Bodies

Titles, abstracts and plain language summaries for:

- clinicians
- PRM trainees, undergraduate medical students, rehabilitation professionals student
- policymakers, patients’ associations and other stakeholders

Identify unmet needs of evidence synthesis and activate correct prioritization for future work of Cochrane



Other initiatives

Lectures & Workshops

Students For Best Evidence – S4BE in Rehabilitation

Other educational activities under way – look at our website



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Physical and Rehabilitation Medicine (PRM) and EBM

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- State of research in PRM

Implementation of EBM in PRM

- Knowledge Translation
- Cochrane Rehabilitation

Some solutions for EBM in PRM



What can we do to face these challenges?

There is a general «agreement» that **PRM has low evidence**

- We are struggling to produce sound (and meaningful) research
- In reality, we are not missing methodologically sound research (RCTs)
- But this good research does not relieve us: we still feel that we are missing evidence

Probably we are **stuck by the RCT gold standard**, that is not the best methodological approach due to the intrinsic limitation of PRM:

- Rehabilitation process
- Black box



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- Rehabilitation process
- Black box

It's time to think out of the box !



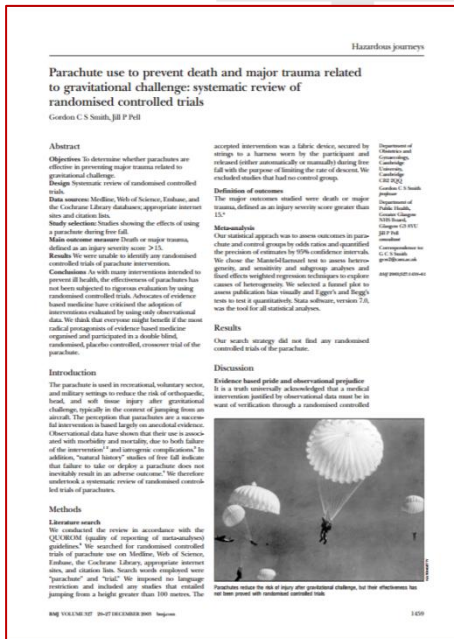
The Parachute Systematic Review of RCTs

Objectives. To determine whether parachutes are effective in preventing major trauma related to gravitational challenge.

Material and Methods. Design: Systematic review of RCTs. Data sources: Medline, Web of Science, Embase, and the Cochrane Library databases; appropriate internet sites and citation lists. Study selection: Studies showing the effects of using a parachute during free fall. Main outcome measure: Death or major trauma, defined as an injury severity score > 15.

Results. We were unable to identify any randomised controlled trials of parachute intervention.

Conclusions. As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised controlled trials.





Equipoise

The **ethics** of clinical research requires equipoise – **a state of genuine uncertainty** ... regarding the comparative therapeutic merits of each arm in a trial...

- Individual level
- **Expert medical community**

What the consequences in PRM ?

Let's imagine **gait rehabilitation** for stroke

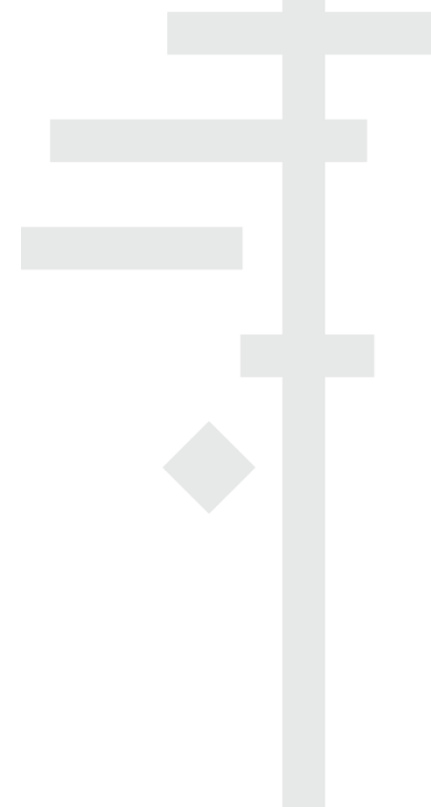
Is an RCT about making the patient walk like a **parachute RCT**?

Would an **ethical committee** consider unethical a control group without treatment ?

- Yes !
- **Rehabilitation** in this topic **has evidence** without RCTs

What are not parachutes (ethical committees would allow the studies)?

- **Who** makes him walk ?
- **How** he/she makes him walk ?
- **How** we increase the **recovery** speed ?
- **How** we reduce inherent **costs** ?



1. Parachute Evidence Based Ethical List in PRM

What is this ?

- A proposal to **systematically list all PRM treatments** that:
 - are like parachutes,
 - would be unethical to stop providing,
 - do not need any scientific study to prove their evidence

Methods

- **Consensus** procedures
- **Partners**
 - ISPRM
 - Cochrane
 - others ?

Limits

- **Conflict of interest** (?): but, who else if not us ?

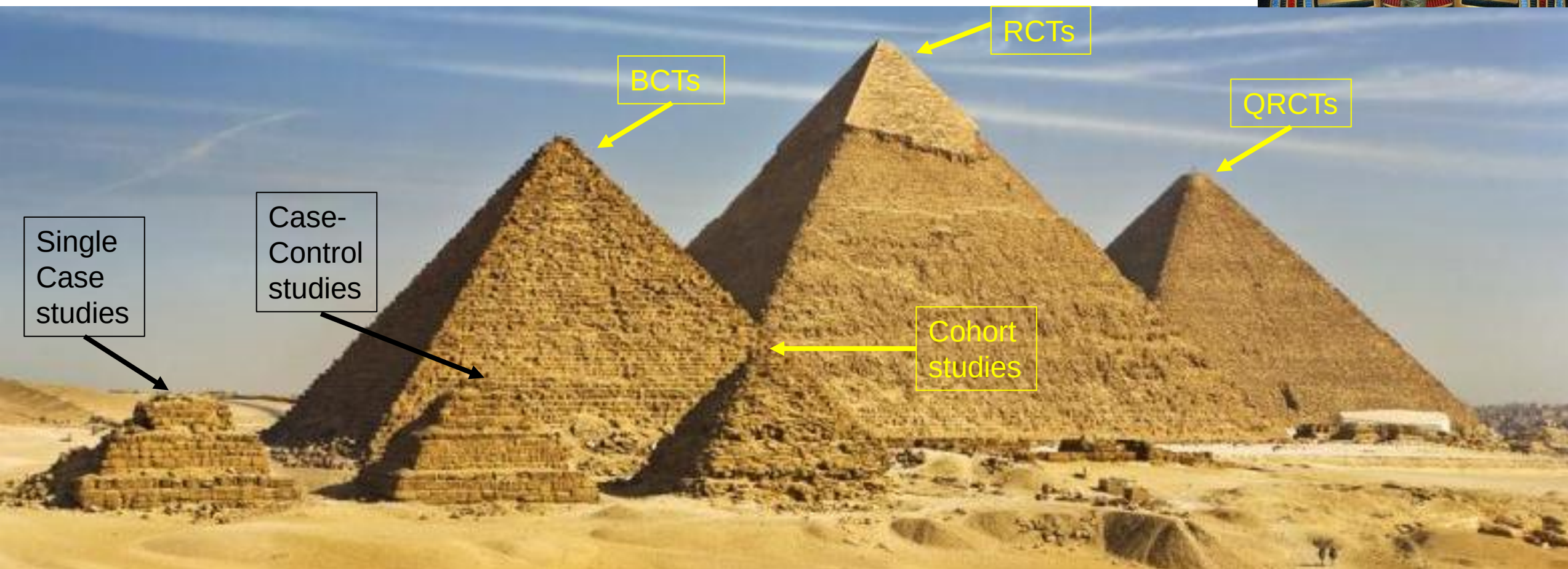


The Pyramid of Evidence



2. The Pyramids of Evidence in PRM

Task of
Cochrane
Rehabilitation



Take home messages

Evidence Based Medicine (EBM)

- EBM is the last methodological achievement of medicine
- Cochrane is the actual àèogold standard for a good EBM approach

Physical and Rehabilitation Medicine (PRM) and EBM

- PRM has specific challenges for EBM that must be faced
- PRM research methodological problems requires better understanding
- PRM is comparatively producing a lot of good research

Implementation of EBM in PRM

- When Evidence is known, a Knowledge Translation (KT) effort is required
- Cochrane Rehabilitation is the KT organization for PRM

PRM needs new out of the box thinking about the Evidence that we have, and how to generate future better Evidence



In PRM there is no EVIDENCE

A constant **boulder**
on PRM shoulders



In PRM there is
no EVIDENCE



Perhaps it is only
a **pebble**
in the shoe of PRM



Thank you

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